Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=AND			
L5	L3 and ((hydraulic or tablet or rotary) adj (press or compact))	25	L5
L4	L3 and ((densified or compacted) adj particle)	2	L4
L3	(needleless adj injection) or (transdermal adj delivery)	4081	L3
L2	sarphie-david-francis.in.	8	L2
L1	Burkoth-terry-lee.in.	3	L1

END OF SEARCH HISTORY

```
### Status: Path 1 of [Dialog Information Services via Modem]

### Status: Initializing TCP/IP using (UseTelnetProto 1 ServiceID pto-dialog)
Trying 31060000009999...Open

DIALOG INFORMATION SERVICES
PLEASE LOGON:
 ******** HHHHHHHH SSSSSSSS?
### Status: Signing onto Dialog
 ********
ENTER PASSWORD:
 ******** HHHHHHHH SSSSSSSS? ********
Welcome to DIALOG
### Status: Connected


Dialog level 02.05.22D

Last logoff:  03jul02 07:23:39
Logon file001 08jul02 10:37:27
           *** ANNOUNCEMENT ***
                    ***
--Important Notice for Japanese KMKNET Users
KMKNET will be terminated on 5/31/02. Please
switch to DLGNET. Please refer to the G-Search
home page at http://www.g-search.or.jp
for more information.
                    ***
--SourceOne patents are now delivered to your
email inbox as PDF replacing TIFF delivery.
See HELP SOURCE1 for more information.
                    ***
--Important news for public and academic
libraries.  See HELP LIBRARY for more information.
                    ***
--Important Notice to Freelance Authors--
See HELP FREELANCE for more information
                    ***
For information about the access to file 43 please see Help News43.
***
NEW FILES RELEASED
***AGROProjects (File 235)
***ARCHIVES OF DERMATOLOGY - SUBSCRIBERS (File 787)
***ARCHIVES OF GENERAL PSYCHIATRY -SUBSCRIBERS (File 794)
***ARCHIVES OF INTERNAL MEDICINE - SUBSCRIBERS(File 795)
***ARCHIVES OF NEUROLOGY - SUBSCRIBERS (File 796)
***ARCHIVES OF OPHTHALMOLOGY - SUBSCRIBERS (File 797)
***ARCHIVES OF OTOLARYNGOLOGY - SUBSCRIBERS(File 798)
***ARCHIVES OF PEDIATRIC & ADOLESCENT MEDICINE-
Subscribers (File 789)
***ARCHIVES OF SURGERY - SUBSCRIBERS (File 800)
***JAMA - Journal of the American Medical Association -
   Subscribers (File 785)
***MIRA (File 81)
***TRADEMARKSCAN-Japan (File 669)
                    ***
UPDATING RESUMED
***Delphes European Business (File 481)
                    ***
RELOADED
***CANCERLIT (File 159)
***CLAIMS/US PATENTS (Files 340, 341, 942)
***Kompass Western Europe (File 590)
***D&B - Dun's Market Identifiers  (File 516)
***Zoological Record Online (File 185)
```

```
REMOVED
***Lancet (File 457)
***Los Angeles Times (File 630)
***Baton Rouge Advocate (File 382)
***Washington Post (File 146)
***Books in Print (File 470)
***Court Filings (File 793)
***Publishers, Distributors & Wholesalers of the U.S. (File 450)
***State Tax Today (File 791)
***Tax Notes Today (File 790)
***Worldwide Tax Daily (File 792)

***New document supplier***
IMED has been changed to INFOTRIE (see HELP OINFOTRI)


>>>Get immediate news with Dialog's First Release
   news service.  First Release updates major newswire
   databases within 15 minutes of transmission over the
   wire.  First Release provides full Dialog searchability
   and full-text features.  To search First Release files in
   OneSearch simply BEGIN FIRST for coverage from Dialog's
   broad spectrum of news wires.

     >>> Enter BEGIN HOMEBASE for Dialog Announcements <<<
     >>>    of new databases, price changes, etc.      <<<
                  ****
KWIC is set to 50.
HILIGHT set on as '*'
***                                    ***

File   1:ERIC  1966-2002/Jun 06
       (c) format only 2002 The Dialog Corporation

      Set  Items  Description
      ---  -----  -----------
Cost is in DialUnits
?b 155, 5, 73
       08jul02 10:37:46 User259876 Session D364.1
            $0.32    0.093 DialUnits File1
     $0.32  Estimated cost File1
     $0.07  TELNET
     $0.39  Estimated cost this search
     $0.39  Estimated total session cost   0.093 DialUnits


SYSTEM:OS  - DIALOG OneSearch
  File 155:MEDLINE(R)  1966-2002/Jul W1
*File 155: Daily alerts are now available. This file has
been reloaded. Accession numbers have changed.
  File   5:Biosis Previews(R)  1969-2002/Jun W5
         (c) 2002 BIOSIS
  File  73:EMBASE  1974-2002/Jun W5
         (c) 2002 Elsevier Science B.V.
*File  73: For information about Explode feature please
see Help News73.

      Set  Items  Description
      ---  -----  -----------
?s (needleless (w) injection) or ((transdermal or biolistic)(w) delivery)
           451  NEEDLELESS
        614394  INJECTION
            57  NEEDLELESS(W)INJECTION
         17419  TRANSDERMAL
           897  BIOLISTIC
```

```
          344713  DELIVE
            2206  (TRANSDERMAL OR BIOLISTIC)(W)DELIVERY
      S1    2263  (NEEDLELESS (W) INJECTION) OR ((TRANSDERMAL OR
                  BIOLISTIC)(W) DELIVERY)
?s s1 and ((densified or compacted) (w) particle)
            2263  S1
             139  DENSIFIED
            3732  COMPACTED
          130074  PARTICLE
               1  (DENSIFIED OR COMPACTED)(W)PARTICLE
      S2       0  S1 AND ((DENSIFIED OR COMPACTED) (W) PARTICLE)
?s (densified or compacted) (w) particle
             139  DENSIFIED
            3732  COMPACTED
          130074  PARTICLE
      S3       1  (DENSIFIED OR COMPACTED) (W) PARTICLE
?t s3/3,k/all

 3/3,K/1     (Item 1 from file: 73)
DIALOG(R)File  73:EMBASE
(c) 2002 Elsevier Science B.V. All rts. reserv.

10738296     EMBASE No: 2000218317
  A new model for the hardness of a *compacted* *particle* system, applied
to tablets of pharmaceutical polymers
  Kuentz M.; Leuenberger H.
  H. Leuenberger, Pharma Center, University of Basel, Klingelbergstrasse
  50, CH-4056 Basel  Switzerland
  AUTHOR EMAIL: leuenberger@ubaclu.unibas.ch
  Powder Technology ( POWDER TECHNOL. ) (Switzerland)  21 AUG 2000, 111/1-2
  (145-153)
  CODEN: POTEB   ISSN: 0032-5910
  PUBLISHER ITEM IDENTIFIER: S0032591000002503
  DOCUMENT TYPE: Journal; Article
  LANGUAGE: ENGLISH   SUMMARY LANGUAGE: ENGLISH
  NUMBER OF REFERENCES: 28

  A new model for the hardness of a *compacted* *particle* system, applied
to tablets of pharmaceutical polymers
?ds

Set     Items   Description
S1       2263   (NEEDLELESS (W) INJECTION) OR ((TRANSDERMAL OR BIOLISTIC)(-
            W) DELIVERY)
S2          0   S1 AND ((DENSIFIED OR COMPACTED) (W) PARTICLE)
S3          1   (DENSIFIED OR COMPACTED) (W) PARTICLE
?s s1 and ((hydraulic or tablet or rotary) (w) press)
            2263  S1
           20704  HYDRAULIC
           31635  TABLET
            8722  ROTARY
           81674  PRESS
             331  ((HYDRAULIC OR TABLET) OR ROTARY)(W)PRESS
      S4       0  S1 AND ((HYDRAULIC OR TABLET OR ROTARY) (W) PRESS)
?ds

Set     Items   Description
S1       2263   (NEEDLELESS (W) INJECTION) OR ((TRANSDERMAL OR BIOLISTIC)(-
            W) DELIVERY)
S2          0   S1 AND ((DENSIFIED OR COMPACTED) (W) PARTICLE)
S3          1   (DENSIFIED OR COMPACTED) (W) PARTICLE
S4          0   S1 AND ((HYDRAULIC OR TABLET OR ROTARY) (W) PRESS)
?logoff
       08jul02 10:40:58 User259876 Session D364.2
            $0.62    0.194 DialUnits File155
     $0.62  Estimated cost File155
```

```
        $1.26    0.2[redacted] DialUnits File5
$1.26   Estimated cost File5
        $2.21    0.246 DialUnits File73
           $2.50  1 Type(s) in Format  3
        $2.50  1 Types
$4.71   Estimated cost File73
        OneSearch, 3 files,  0.665 DialUnits FileOS
$0.86   TELNET
$7.45   Estimated cost this search
$7.84   Estimated total session cost   0.758 DialUnits


### Status: Signed Off. (4 minutes)
```

18/3,K/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

08625336 96177335
Cell-free cloning and *biolistic* inoculation of an infectious cDNA of potato virus Y.
Fakhfakh H; Vilaine F; Makni M; Robaglia C
Laboratoire de Genetique, Universite de Tunis, Tunisia.
Journal of general virology (ENGLAND) Mar 1996, 77 (Pt 3) p519-23, ISSN 0022-1317 Journal Code: I9B
Languages: ENGLISH
Document type: JOURNAL ARTICLE

Cell-free cloning and *biolistic* inoculation of an infectious cDNA of potato virus Y.
... cloning in Escherichia coli cells. A full-length 9.7 kb PVY cDNA was obtained by reverse transcription polymerase chain reaction (RT-PCR) from the *RNA* of PVY (tuber necrotic strain, PVYNTN). Double-stranded *DNA* fragments were used as primers (ds megaprimers), to include signals for transcription in vivo (a cauliflower mosaic virus 35S *RNA* promoter and a nopaline synthase terminator) in the final PCR product. *Biolistic* bombardment with a helium *particle* gun was used to inoculate the amplified product to detached tobacco leaves. Inoculation of tobacco plants with ground inoculated leaves followed by northern blot, ELISA and immuno-electron microscopy demonstrated that the *DNA* was highly infectious with up to 90% of bombarded leaves containing the virus. This methodology will allow the use of reverse genetics in the study of PVY-plant interactions and will also be useful for obtaining infectious cDNA from other viruses with large *RNA* genomes.
Descriptors: Cloning, Molecular--Methods--MT; **DNA*, Complementary --Genetics--GE; **DNA*, Viral--Genetics--GE; *Polymerase Chain Reaction --Methods--MT; *Potyvirus--Genetics--GE; *DNA* Primers; Molecular Sequence Data; *RNA*-Directed *DNA* Polymerase; Tobacco--Virology--VI
Enzyme No.: EC 2.7.7.49 (*RNA*-Directed *DNA* Polymerase)
Chemical Name: *RNA*-Directed *DNA* Polymerase; (*DNA* Primers; (*DNA*, Complementary; (*DNA*, Viral

18/3,K/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

08609944 96118928
***Biolistic* transformation of the obligate plant pathogenic fungus, Erysiphe graminis f.sp. hordei.**
Christiansen SK; Knudsen S; Giese H
Plant Genetics Section, Environmental Science and Technology Department, Riso National Laboratory, DK-4000 Roskilde, Denmark.
Current genetics (UNITED STATES) Dec 1995, 29 (1) p100-2, ISSN 0172-8083 Journal Code: CUG
Languages: ENGLISH
Document type: JOURNAL ARTICLE

***Biolistic* transformation of the obligate plant pathogenic fungus, Erysiphe graminis f.sp. hordei.**
Particle gun acceleration appears to be a possible way to transform mycelium cells of obligate plant parasites growing on host surfaces. GUS expression was obtained in E. graminis f.sp. hordei cells after bombardment with the GUS *gene* under the control of the E. graminis f.sp. hordei β-tubulin promoter. Three heterologous promoters, onefrom Aspergillus nidulans and two from Cochliobolus heterostrophus, gave...
; Aspergillus nidulans--Genetics--GE; Barley--Microbiology--MI; *Gene* Expression Regulation; Glucuronidase--Biosynthesis--BI; Plants --Microbiology--MI; Promoter Regions (Genetics); Recombinant Proteins --Biosynthesis--BI; Recombinant Proteins--Genetics--GE; Time Factors;

Tubulin--Genetics--GE

18/3,K/3 (Item 3 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

08348659 95352209
Protection against Mycoplasma pulmonis infection by genetic vaccination.
Lai WC; Bennett M; Johnston SA; Barry MA; Pakes SP
Department of Pathology, University of Texas Southwestern Medical Center at Dallas 75235, USA.
DNA and cell biology (UNITED STATES) Jul 1995, 14 (7) p643-51, ISSN 1044-5498 Journal Code: AF9
Contract/Grant No.: RR08552, RR, NCRR
Languages: ENGLISH
Document type: JOURNAL ARTICLE

... usually requires purification of that protein, which is injected into animals. The isolation of pure protein is time consuming and costly. Recently, a technique called *biolistic* transformation (biological ballistic system) microparticle injection, *gene* gun, or *particle* bombardment was developed. The basic idea is that *DNA* or biological material coated onto heavy tungsten or gold *particles* is shot into target cells or animals. We have vaccinated mice by introducing the *gene* (Mycoplasma pulmonis *DNA* or a specific fragment) encoding a protein recognized by a protective monoclonal antibody directly into the skin or muscle of mice by two methods: (i) using a hand-held form of the *biolistic* system that can propel *DNA*-coated gold microprojectiles (2 micrograms of *DNA*) directly into the skin; (ii) using a conventional intramuscular injection of the *DNA* (100 micrograms) into quadricep muscles of transfected mice. HeLa cells were transfected in vitro by the *gene* gun or by the liposomal delivery system. Indirect immuno-fluorescent antibody (IFA) assay of culture cells indicated that both methods could be successful. Production of...

... in spleen cells were also tested. Both delivery systems induced humoral and cellular immunity, and vaccinated the mice against infection. Genetic immunization by using the *gene* gun saves time, money, and labor; moreover, this general method is also applicable to *gene* therapy.
Descriptors: Bacterial Vaccines; **DNA*, Bacterial--Immunology--IM; *Genes, Bacterial; *Mycoplasma--Genetics--GE; *Mycoplasma Infections --Immunology--IM; Antibody Formation; Antigens, Bacterial--Analysis--AN; Antigens, Bacterial--Biosynthesis--BI; Base Sequence; *DNA* Primers; *DNA* , Bacterial--Genetics--GE; Genomic Library; Hela Cells; Mice; Mice, Inbred BALB C; Molecular Sequence Data; Mycoplasma Infections--Prevention and Control--PC; Polymerase Chain Reaction; Recombinant...
Chemical Name: Antigens, Bacterial; (Bacterial Vaccines; (*DNA* Primers; (*DNA*, Bacterial; (Recombinant Proteins

18/3,K/4 (Item 4 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

08228991 94373858
***Biolistic* transformation of conidia of Botryotinia fuckeliana.**
Hilber UW; Bodmer M; Smith FD; Koller W
Department of Plant Pathology, Swiss Federal Research Station, Wadenswil.
Current genetics (UNITED STATES) Feb 1994, 25 (2) p124-7, ISSN 0172-8083 Journal Code: CUG
Languages: ENGLISH
Document type: JOURNAL ARTICLE

***Biolistic* transformation of conidia of Botryotinia fuckeliana.**
Botryotinia fuckeliana, the causal agent of grey mould, was biolistically

transformed to hygromycin B resistance using a plasmid (pOHT) containing a bacterial hygromycin phosphotransferase *gene* fused to regulatory sequences from Aspergillus nidulans. Multiple copies of the plasmid, precipitated onto tungsten *particles*, were delivered into the conidia by a helium-driven *gene* gun. Southern analysis showed that the plasmid was integrated into the fungal genome at one single locus. After five subsequent transfers on selective medium, all...

Descriptors: *Gene* Transfer--Instrumentation--IS; *Mitosporic Fungi --Genetics--GE; *Transformation, Genetic; Bacterial Proteins--Genetics--GE; Blotting, Southern; Chromosomes, Fungal; Drug Resistance, Microbial --Genetics--GE; *DNA*, Bacterial--Administration and Dosage--AD; Hygromycin B--Pharmacology--PD; Mitosporic Fungi--Drug Effects--DE; Mitosporic Fungi --Growth and Development--GD; Phosphotransferases (Alcohol Group Acceptor) --Genetics...

Chemical Name: Phosphotransferases (Alcohol Group Acceptor); (hygromycin-B kinase; (Bacterial Proteins; (*DNA*, Bacterial; (Plasmids; (Hygromycin B

18/3,K/5 (Item 5 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

07987673 94347383

***Biolistic* techniques for transfection of mosquito embryos (Anopheles gambiae).**

Mialhe E; Miller LH

National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD.

BioTechniques (UNITED STATES) May 1994, 16 (5) p924-31, ISSN 0736-6205 Journal Code: AN3

Languages: ENGLISH

Document type: JOURNAL ARTICLE

***Biolistic* techniques for transfection of mosquito embryos (Anopheles gambiae).**

To compensate for the extremely low rates of transformation by *DNA* microinjection into mosquito embryos of Anopheles gambiae, *biolistic* techniques were evaluated for introduction of *DNA* into large numbers of mosquito embryos. *Biolistic* experiments were first performed with a commercially available instrument intended for this purpose, according to the recommended procedure. The amount of *DNA* delivered was measured by the expression of luciferase under the control of the Drosophila heat shock protein (hsp) 70 promoter. Despite attempts to optimize *biolistic* parameters, the level of luciferase activity was low and highly variable. Two other methods of *biolistic* delivery of *DNA*-coated *particles* in aqueous suspension were then evaluated. One method used the gas explosion of the commercially available instrument (mentioned above) to drive an aqueous suspension of *DNA*-coated *particles* at high pressure. This method reproducibly increased the level of expression about 100-fold without greatly reducing embryo viability. Another method, which was recently described for plant transfection, uses lower pressure to deliver the aqueous suspension of *DNA*-coated *particles*. The level of expression of luciferase and the survival of embryos were equivalent to that obtained with the instrument modified for aqueous delivery of *particles*. Thus, both aqueous methods offer the advantages of reproducibly delivering more *DNA* to the embryos. Moreover, these methods could be suitable for delivering *DNA* mixed with proteins, such as restriction endonucleases and integrases, that may be destroyed by ethanol precipitation used in the standard PDS-1000/He method.

18/3,K/6 (Item 6 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

07985913 94344804

Effect of *Biolistic* *particle* size on the efficiency of transfection of oocytes in Xenopus ovary tissue.

Cheng FM; Joho KE

Department of Biochemistry and Molecular Biology, Louisiana State University Medical Center, New Orleans 70119.

Nucleic acids research (ENGLAND) Aug 11 1994, 22 (15) p3265-6, ISSN 0305-1048 Journal Code: O8L

Languages: ENGLISH

Document type: JOURNAL ARTICLE

Effect of *Biolistic* *particle* size on the efficiency of transfection of oocytes in Xenopus ovary tissue.

Descriptors: *DNA*--Administration and Dosage--AD; *Oocytes--Metabolism --ME; **Particle* Size; *Transfection

Chemical Name: beta-Galactosidase; (*DNA*

18/3,K/7 (Item 7 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

07928259 94253560

Generation of allo-reactive cytotoxic T lymphocytes by *particle* bombardment-mediated *gene* transfer.

Hui KM; Sabapathy TK; Oei AA; Chia TF

Laboratory of Molecular Immunology, National University of Singapore.

Journal of immunological methods (NETHERLANDS) May 16 1994, 171 (2) p147-55, ISSN 0022-1759 Journal Code: IFE

Languages: ENGLISH

Document type: JOURNAL ARTICLE

Generation of allo-reactive cytotoxic T lymphocytes by *particle* bombardment-mediated *gene* transfer.

... understood to involve the activation and expansion of tumor-specific cytotoxic T lymphocytes (CTL). To immuno-potentiate the generation of CTL, we have employed the *biolistic* system for the genetic immunization of mice. Here, we report the efficient generation of anti-H-2Kb allo-reactive CTL by *particle* acceleration-mediated genetic immunization of mouse spleen cells with H-2Kb *DNA*. The insertion and expression of exogenous *gene* into host spleen cells following in situ genetic inoculation to effect the generation of a cellular immune response may permit novel alternative strategies for immunotherapy.

Descriptors: *Gene* Transfer; *T-Lymphocytes, Cytotoxic--Immunology--IM; *T-Lymphocytes, Cytotoxic--Physiology--PH; *DNA*--Genetics--GE; *Gene* Expression; H-2 Antigens--Genetics--GE; H-2 Antigens--Immunology--IM; Immunization; Methods; Mice; Mice, Inbred AKR; Plasmids--Genetics--GE; Spleen--Immunology--IM; Spleen--Physiology...

Chemical Name: H-2 Antigens; (H-2k(b) antigen; (Plasmids; (*DNA*

18/3,K/8 (Item 8 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

07897600 94200161

Isoform-specific induction of a retinoid-responsive antigen after *biolistic* transfection of chimaeric retinoic acid/thyroid hormone receptors into a regenerating limb.

Pecorino LT; Lo DC; Brockes JP

Ludwig Institute for Cancer Research, University College London, UK.

Development (ENGLAND) Feb 1994, 120 (2) p325-33, ISSN 0950-1991 Journal Code: ECW

Languages: ENGLISH

Document type: JOURNAL ARTICLE

Isoform-specific induction of a retinoid-responsive antigen after *biolistic* transfection of chimaeric retinoic acid/thyroid hormone receptors into a regenerating limb.

... newt wound epidermis by introducing chimaeric RA/thyroid hormone (T3) receptors (chi alpha 1 and chi delta 1) that can be activated by T3. A *biolistic* *particle* delivery system was employed to transfect cells in the wound epidermis of a regenerating limb and approximately 10% of the cells in targeted surface areas...

... 240), was used to assess the functional role of chi alpha 1 and chi delta 1. Chimaeric receptors were transfected with an alkaline phosphatase marker *gene*, activated with T3, and the expression of both the marker and WE3 was analyzed by double-label immunofluorescence. Newt limbs transfected with chi delta 1...

18/3,K/9 (Item 9 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

07844024 94073992

***Biolistic* transformation of Trichoderma harzianum and Gliocladium virens using plasmid and genomic *DNA*.**

Lorito M; Hayes CK; Di Pietro A; Harman GE

Department of Horticultural Sciences, Cornell University, Geneva, NY 14456.

Current genetics (UNITED STATES) Oct 1993, 24 (4) p349-56, ISSN 0172-8083 Journal Code: CUG

Languages: ENGLISH

Document type: JOURNAL ARTICLE

***Biolistic* transformation of Trichoderma harzianum and Gliocladium virens using plasmid and genomic *DNA*.**

Biolistic (biological ballistic) and protoplast-mediated procedures were compared as methods for transforming strains of Gliocladium virens and Trichoderma harzianum. For *biolistic* transformation, conidia were bombarded using a helium-driven *biolistic* device to accelerate M5 tungsten *particles* coated with plasmid or genomic *DNA*. *DNA* from either source contained a bacterial hygromycin B resistance *gene* (hygB) as a dominant selectable marker. The same sources of *DNA* were also used to transform protoplasts using a standard polyethylene glycol-CaCl2 protoplast fusion protocol. Hygromycin B-resistant (HygBR) transformants were recovered from all strains, methods, and *DNA* sources except for genomic *DNA* used with the protoplast method. The *biolistic* procedure was technically simpler, and increased transformation frequency and genetic stability in the progeny as compared with the protoplast-mediated transformation. Southern analysis of homokaryotic...

... the transforming sequences were integrated into the genome of the recipient strains, and apparently were methylated. This is the first study presenting detailed results on *biolistic* transformation of a filamentous fungus.

; Blotting, Southern; Cell Nucleus--Metabolism--ME; *DNA*, Fungal; Genome, Fungal; Protoplasts--Metabolism--ME

Chemical Name: *DNA*, Fungal; (Plasmids

18/3,K/10 (Item 10 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

07730855 94159686

Plastid engineering in land plants: a conservative genome is open to change.

Maliga P; Carrer H; Kanevski I; Staub J; Svab Z

Waksman Institute, Rutgers, State University of New Jersey, Piscataway

08855-0759.
Philosophical transactions of the Royal Society of London. Series B: Biological sciences (ENGLAND) Nov 29 1993, 342 (1301) p203-8, ISSN 0962-8436 Journal Code: P5Z
Languages: ENGLISH
Document type: JOURNAL ARTICLE

We have developed efficient transformation protocols to modify each of the 500-10,000 plastid genome copies in a tobacco cell. The transforming *DNA* is introduced on the surface of microscopic tungsten *particles* by the *biolistic* process. Selection for transplastomes is by spectinomycin resistance based on expression of aminoglycoside-3"-adenyltransferase from a chimeric aadA *gene* in the transforming *DNA*. Manipulations that are now feasible include replacement of endogenous plastid genes with *DNA* sequences modified in vitro, targeted *gene* disruption, and insertion of reporter genes into the plastid genome. Alternative methods for plastid genome manipulations may be developed utilizing an extrachromosomal element which was identified during the transformation studies. Introduction of foreign genes under control of plastid *gene* expression elements results in duplication of endogenous regulatory sequences. A sensitive somatic assay to detect deletions via such direct repeats confirmed that these sequence duplications do not result in significant genome instability. The ability to transform plastids will facilitate the study of plastid *gene* regulation, and the application of genetic engineering to crop improvement.
; Base Sequence; *DNA*--Genetics--GE; Extrachromosomal Inheritance; Genes, Plant; Genetic Markers; Genome; Molecular Sequence Data; Mutagenesis ; Plastids; Transformation, Genetic
Chemical Name: Genetic Markers; (*DNA*

18/3,K/11 (Item 11 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

07698826 94092774
Transient plant *gene* expression: a simple and reproducible method based on flowing *particle* gun.
Godon C; Caboche M; Daniel-Vedele F
Laboratoire de Biologie Cellulaire, INRA, Versailles, France.
Biochimie (FRANCE) 1993, 75 (7) p591-5, ISSN 0300-9084 Journal Code: A14
Languages: ENGLISH
Document type: JOURNAL ARTICLE

Transient plant *gene* expression: a simple and reproducible method based on flowing *particle* gun.
Successful transient expression of beta-glucuronidase (Gus) and luciferase (Luc) in Nicotiana tabacum leaves was obtained after *gene* delivery by a simple and inexpensive *particle* gun. Takeuchi's *biolistic* process system was adapted to accelerate directly in a helium stream *DNA*-coated microprojectiles into intact plant leaf tissues. After bombardment of p70-omega-59Gus construction (duplication of the CaMV 35S enhancer), variability inherent to the bombardment...
Descriptors: *Gene* Transfer; *Genes, Plant; *Tobacco--Genetics--GE; *Gene* Expression; Genetic Techniques; Glucuronidase--Genetics--GE; Luciferase--Genetics--GE; Plasmids; Reproducibility of Results

18/3,K/12 (Item 12 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

07636638 93386194
Chloroplast transformation in plants: polyethylene glycol (PEG) treatment of protoplasts is an alternative to *biolistic* delivery systems.
O'Neill C; Horvath GV; Horvath E; Dix PJ; Medgyesy P

Biological Research Centre, Hungarian Academy of Sciences, Szeged.
Plant journal (ENGLAND) May 1993, 3 (5) p729-38, ISSN 0960-7412
Journal Code: BRU
Languages: ENGLISH
Document type: JOURNAL ARTICLE

Chloroplast transformation in plants: polyethylene glycol (PEG) treatment of protoplasts is an alternative to *biolistic* delivery systems.

Nicotiana plumbaginifolia protoplasts were directly transformed by PEG treatment with a cloned 16S rRNA *gene* isolated from a double antibiotic-resistant Nicotiana tabacum plastid mutant. Putative plastid transformants were selected in cell culture by their spectinomycin resistance and identified by...

... putative plastid transformants the origin of the resistance mutations was identified by the absence of an AatII site, missing in the donor N. tabacum plastid *gene* (spectinomycin resistance site) but present in that of wild-type N. plumbaginifolia, and a sequence analysis of the particular nucleotide changes in both resistance sites. Restriction enzyme analysis of total plastid *DNA* (ptDNA), and the recloning and full sequencing of the fragment introduced, investigated in one of the plastid transformants, showed no *DNA* rearrangements accompanied with the integration process. Sequence analysis indicated a targeted, homologous integration of the *DNA* fragment introduced but an unexpectedly complete homology of the parental ptDNA sequences in this region prevented the location of borders. Although the frequency of plastid transformant colonies (2 x 10(-5)) should still be improved, this method for stable chloroplast *DNA* transformation is comparable with or more efficient than the *particle* bombardment techniques.

; Base Sequence; Cell Line; Cloning, Molecular; Drug Resistance--Genetics --GE; *DNA*; *DNA Restriction Enzymes*; Molecular Sequence Data; *RNA*, Ribosomal, 16S--Genetics--GE; Sequence Analysis, *RNA*; Spectinomycin --Pharmacology--PD; Streptomycin--Pharmacology--PD; Tissue Culture; Tobacco --Drug Effects--DE

Enzyme No.: EC 3.1.21 (*DNA* Restriction Enzymes)

Chemical Name: *DNA* Restriction Enzymes; (Polyethylene Glycols; (*RNA*, Ribosomal, 16S; (Spectinomycin; (Streptomycin; (*DNA*

18/3,K/13 (Item 13 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

07531896 93233490

Optimizing the *biolistic* process for different biological applications.

Sanford JC; Smith FD; Russell JA

Department of Horticultural Sciences, New York State Agricultural Experiment Station, Cornell University, Geneva 14456.

Methods in enzymology (UNITED STATES) 1993, 217 p483-509, ISSN 0076-6879 Journal Code: MVA

Languages: ENGLISH

Document type: JOURNAL ARTICLE

Optimizing the *biolistic* process for different biological applications.

The *biolistic* process is still rapidly evolving. We do not anticipate further major improvements in *biolistic* apparatus. There will probably still be further major improvements in *particles*, *DNA* coating, and vectors, as well as significant further advances in understanding of biological determinants of cell penetration and survival. The technology has currently reached the...

; Bacteriophage lambda; Equipment Design; Escherichia coli; Gold; Indicators and Reagents; *Particle* Accelerators; Plants; Tungsten --Toxicity--TO

18/3,K/14 (Item 14 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

07012480 92211325

***Biolistic* transformation of prokaryotes: factors that affect *biolistic* transformation of very small cells.**

Smith FD; Harpending PR; Sanford JC
Department of Horticultural Sciences, Cornell University, Geneva 14456.

Journal of general microbiology (ENGLAND) Jan 1992, 138 (Pt 1) p239-48, ISSN 0022-1287 Journal Code: I87
Contract/Grant No.: ROI-GM 41426-01, GM, NIGMS
Languages: ENGLISH
Document type: JOURNAL ARTICLE

***Biolistic* transformation of prokaryotes: factors that affect *biolistic* transformation of very small cells.**

Five bacterial species were transformed using *particle* gun-technology. No pretreatment of cells was necessary. Physical conditions (helium pressure, target cell distance and gap distance) and biological conditions (cell growth phase, osmoticum concentration, and cell density) were optimized for *biolistic* transformation of Escherichia coli and these conditions were then used to successfully transform Agrobacterium tumefaciens, Erwinia amylovora, Erwinia stewartii and Pseudomonas syringae pv. syringae. Transformation rates for E. coli were 10(4) per plate per 0.8 micrograms *DNA*. Although transformation rates for the other species were low (less than 10(2) per plate per 0.8 micrograms *DNA*), successful transformation without optimization for each species tested suggests wide utility of *biolistic* transformation of prokaryotes. E. coli has proven to be a useful model system to determine the effects of relative humidity, *particle* size and *particle* coating on efficiency of *biolistic* transformation.

; Culture Media; *DNA*, Bacterial--Genetics--GE; Helium; Humidity; Osmolar Concentration; *Particle* Size; Plasmids; Tungsten
Chemical Name: Culture Media; (*DNA*, Bacterial; (Plasmids; (Tungsten; (Helium

18/3,K/15 (Item 15 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

06774505 91197112

***Biolistic* transformation of a procaryote, Bacillus megaterium.**

Shark KB; Smith FD; Harpending PR; Rasmussen JL; Sanford JC
Department of Horticultural Sciences, Cornell University, Geneva, New York 14456.

Applied and environmental microbiology (UNITED STATES) Feb 1991, .57 (2) p480-5, ISSN 0099-2240 Journal Code: 6K6
Contract/Grant No.: ROI-GM 41426-01, GM, NIGMS
Languages: ENGLISH
Document type: JOURNAL ARTICLE

***Biolistic* transformation of a procaryote, Bacillus megaterium.**

We present a simple and rapid method for introducing exogenous *DNA* into a bacterium, Bacillus megaterium, utilizing the recently developed *biolistic* process. A suspension of B. megaterium was spread onto the surface of nonselective medium. Plasmid pUB110 *DNA*, which contains a *gene* that confers kanamycin resistance, was precipitated onto tungsten *particles*. Using a *biolistic* propulsion system, the coated *particles* were accelerated at high velocities into the B. megaterium recipient cells. Selection was done by use of an agar overlay containing 50 micrograms of kanamycin...
... medium interface after 72 h of incubation, and the recipient strain was shown to contain the delivered plasmid by agarose gel electrophoresis of isolated plasmid *DNA* . All strains of B. megaterium tested were successfully transformed by this method, although transformation efficiency

varied among strains. Physical variables of the *biolistic* process and biological variables associated with the target cells were optimized, yielding greater than 10(4) transformants per treated plate. This is the first report of the *biolistic* transformation of a procaryote.
; *DNA*, Bacterial--Genetics--GE; Genetic Techniques; Plasmids
Chemical Name: *DNA*, Bacterial; (Plasmids

18/3,K/16 (Item 16 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

06608175 90213543
***Biolistic* nuclear transformation of Saccharomyces cerevisiae and other fungi.**
Armaleo D; Ye GN; Klein TM; Shark KB; Sanford JC; Johnston SA
Department of Botany, Duke University, Durham, NC 27706.
Current genetics (UNITED STATES) Feb 1990, 17 (2) p97-103, ISSN 0172-8083 Journal Code: CUG
Languages: ENGLISH
Document type: JOURNAL ARTICLE

***Biolistic* nuclear transformation of Saccharomyces cerevisiae and other fungi.**
... expression of the introduced genes (Klein et al. 1987). Saccharomyces cerevisiae is used here as a model system to define the basic parameters governing the *biolistic* (biological-ballistic) delivery of *DNA* into cells. Among the physical factors affecting the efficiency of the process in yeast are the microprojectile's constitution, size, concentration and amount, and the procedure used for binding *DNA* to it. The biological parameters that affect the process include the cell's genotype, growth phase, plating density, and the osmotic composition of the medium...
... these physical and biological parameters, rates of transformation between 10(-5) and 10(-4) were achieved. Stable nuclear transformants result primarily from penetration of single *particles* of 0.5-0.65 micron in diameter, delivering on average 10-30 biologically active plasmids into the cell. The tungsten *particles* detectably increase the buoyant density of the transformants' progenitors.
; Cell Nucleus--Metabolism--ME; Culture Media; *DNA*, Fungal--Genetics --GE; Neurospora crassa--Growth and Development--GD; Saccharomyces--Growth and Development--GD; Saccharomyces cerevisiae--Growth and Development--GD
Chemical Name: Culture Media; (*DNA*, Fungal

18/3,K/17 (Item 17 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

06579388 91355906
Optimization of delivery of foreign *DNA* into higher-plant chloroplasts.
Ye GN; Daniell H; Sanford JC
Department of Horticultural Sciences, Cornell University, Geneva, NY 14456.
Plant molecular biology (NETHERLANDS) Dec 1990, 15 (6) p809-19, ISSN 0167-4412 Journal Code: A6O
Languages: ENGLISH
Document type: JOURNAL ARTICLE

Optimization of delivery of foreign *DNA* into higher-plant chloroplasts.
We report here an efficient and highly reproducible delivery system, using an improved *biolistic* transformation device, that facilitates transient expression of beta-glucuronidase (GUS) in chloroplasts of cultured tobacco suspension cells. Cultured tobacco cells collected on filter papers were bombarded with tungsten *particles* coated with pUC118 or pBI101.3 (negative controls), pBI505 (positive nuclear control) or a chloroplast expression vector (pHD203-GUS), and were assayed for GUS

activity...

... of organelle-specific expression of pHD203-GUS using PEG-mediated protoplast transformation. Chloroplast transformation efficiencies increased dramatically (about 200-fold) using an improved helium-driven *biolistic* device, as compared to the more commonly used gun powder charge-driven device. Using GUS as a reporter *gene* and the improved *biolistic* device, optimal bombardment conditions were established, consistently producing several hundred transient chloroplast transformants per Petri plate. Chloroplast transformation efficiency was found to be increased further...

... M sorbitol and 0.55 M mannitol) in the bombardment and incubation medium. This system provides a highly effective mechanism for introducing and expressing plasmid *DNA* within higher-plant chloroplasts, and the fact that GUS functions as an effective marker *gene* now makes many genetic studies possible which were not possible before.
Descriptors: Chloroplasts; *Cloning, Molecular--Methods--MT; **DNA* , Recombinant--Genetics--GE; *Genetic Techniques; *Glucuronidase --Biosynthesis--BI; *Recombinant Fusion Proteins--Biosynthesis--BI; *Transformation, Genetic; Bacterial Proteins--Genetics--GE; Equipment Design; Escherichia coli--Genetics--GE; *Gene* Expression; Genes, Structural, Bacterial; Genetic Techniques--Instrumentation--IS; Genetic Vectors; Glucuronidase--Genetics--GE; Protoplasts--Metabolism--ME; Recombinant Fusion Proteins--Genetics--GE; Tobacco--Cytology--CY; Tobacco ...
Chemical Name: Glucuronidase; (Bacterial Proteins; (*DNA*, Recombinant; (Recombinant Fusion Proteins; (Tungsten

18/3,K/18 (Item 18 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

06450692 90115912
Transient foreign *gene* expression in chloroplasts of cultured tobacco cells after *biolistic* delivery of chloroplast vectors.
Daniell H; Vivekananda J; Nielsen BL; Ye GN; Tewari KK; Sanford JC
Department of Biological Sciences, University of Idaho, Moscow 83843.
Proceedings of the National Academy of Sciences of the United States of America (UNITED STATES) Jan 1990, 87 (1) p88-92, ISSN 0027-8424
Journal Code: PV3
Languages: ENGLISH
Document type: JOURNAL ARTICLE

Transient foreign *gene* expression in chloroplasts of cultured tobacco cells after *biolistic* delivery of chloroplast vectors.
... region from maize (pAC series) have been used in this study. In addition, chloroplast expression vectors containing replicon fragments from pea, tobacco, or maize chloroplast *DNA* have also been tested for efficiency and duration of cat expression in chloroplasts of tobacco cells. Cultured NT1 tobacco cells collected on filter papers were bombarded with tungsten *particles* coated with pUC118 (negative control), 35S-CAT (nuclear expression vector), pHD312 (repliconless chloroplast expression vector), and pHD407, pACp18, and pACp19 (chloroplast expression vectors with replicon...
Descriptors: Chloroplasts--Metabolism--ME; **Gene* Expression; *Genetic Vectors; *Plants--Genetics--GE; *Tobacco--Genetics--GE

18/3,K/19 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10856783 BIOSIS NO.: 199799477928
Somatic embryo cycling: Evaluation of a novel transformation and assay

systems for seed-specific *gene* expression in soybeans.
AUTHOR: Liu Wennuam; Torisky Rebecca S; McAllister Kay P; Avdiushko Sergei; Hildebrand David; Collins Glenn B
AUTHOR ADDRESS: R.J. Reynolds Corp., Bowman Gray Technical Center, Winston-Salem, NC**USA
JOURNAL: Plant Cell Tissue and Organ Culture 47 (1):p33-42 1996
ISSN: 0167-6857
RECORD TYPE: Abstract
LANGUAGE: English

Somatic embryo cycling: Evaluation of a novel transformation and assay systems for seed-specific *gene* expression in soybeans.

...ABSTRACT: of soybean somatic embryogenic suspension culture, was developed as an efficient and rapid method of producing tissue suitable for stable transformation of soybean germplasm by *biolistic* *particle* bombardment. Instead of using immature seed explants, cotyledon-staged somatic embryo hypocotyls were placed on auxin-containing medium, where they initiated new somatic embryos primarily...
MISCELLANEOUS TERMS: ...*PARTICLE*-BOMBARDMENT...

...SEED-SPECIFIC *GENE* EXPRESSION

18/3,K/20 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10788692 BIOSIS NO.: 199799409837
Genetic transformation of Indica rice using the *biolistic* method.
AUTHOR: Zheng Hunghong Dai Shunhong; He Sijie; Tian Wenzhong; Li Liangcai
AUTHOR ADDRESS: Inst. Genet., Academia Sinica, Beijing 100101**China
JOURNAL: Acta Genetica Sinica 23 (4):p286-292 1996
ISSN: 0379-4172
RECORD TYPE: Abstract
LANGUAGE: Chinese; Non-English
SUMMARY LANGUAGE: Chinese; English

Genetic transformation of Indica rice using the *biolistic* method.

ABSTRACT: Seventeen commercially important indica rice varieties and lines were tested for their response to *biolistic* transformation, the suitable culture conditions for callus induction and growth and the optimal selection scheme were investigated. After bombardment and selection, resistant calli were obtained...

...domestic varieties. The highest frequency of transformed plant production approximated to the general status in japonica rice. Data from molecular analysis proved that the HPT *gene* had been integrated into plant genome. This experiment provides a basis for further investigations of transformation system of indica rice.
MISCELLANEOUS TERMS: ...*GENE* TRANSFER METHOD...

...HPT *GENE*; ...

...*PARTICLE* BOMBARDMENT

18/3,K/21 (Item 3 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10743888 BIOSIS NO.: 199799365033
Optimization of Cymbidium transformation system by the *particle* gun techniques.
AUTHOR: Hong Kyung-Ae; So In-Sup; Lee-Stadelmann Ok Young; Cheong

Choong-Duk; Riu Key-Zung; Zang-Kual U
AUTHOR ADDRESS: Cheju Applied Radioisotope Res. Inst., Cheju Natl. Univ., Cheju 690-756**South Korea
JOURNAL: Agricultural Chemistry and Biotechnology 39 (4):p260-264 1996
ISSN: 0368-2897
RECORD TYPE: Abstract
LANGUAGE: Korean; Non-English
SUMMARY LANGUAGE: Korean; English

Optimization of Cymbidium transformation system by the *particle* gun techniques.

ABSTRACT: Process of *particle* bombardment for efficient transformation of Cymbidium virescence rhizome microcross sections was investigated using *Biolistic* *particle* delivery system with pBI121 harboring the beta-glucuronidase(GUS) and the neomycin phosphotransferaseII(nptII). The best result was obtained from the combination of 1.11 mu-m tungsten *particles* coated with pBI121, 77.33 kg/cm-2 helium pressure, 6.35 mm gap distance, and 7.0 cm target distance. Transient expression of the reporter *gene*, GUS, bombarded into the rhizome microsections was observed by the histochemical assay. The marker *gene*, nptII, delivered by bombarding the tungsten *particles* coated with the plasmid *DNA* was identified in the transformed rhizome by polymerase chain reaction.
MISCELLANEOUS TERMS: ...*DNA* DELIVERY...

...*DNA* TRANSFER METHOD...

...*PARTICLE* GUN TECHNIQUE...

...*PARTICLES*;

18/3,K/22 (Item 4 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10726272 BIOSIS NO.: 199799347417
The use of *biolistic* *particle* accelerator to introduce genes into isolated islets of langerhans.
AUTHOR: Bartlett R J; Fernandez L; Secore S L; Inveradi L; Tzakis A; Ricordi C
AUTHOR ADDRESS: Miami, FL**USA
JOURNAL: Cell Transplantation 5 (5 SUPPL. 2):p74 1996
CONFERENCE/MEETING: Third International Congress of the Cell Transplant Society Miami Beach, Florida, USA September 29-October 2, 1996
ISSN: 0963-6897
RECORD TYPE: Citation
LANGUAGE: English

The use of *biolistic* *particle* accelerator to introduce genes into isolated islets of langerhans.
MISCELLANEOUS TERMS: ...*BIOLISTIC* *PARTICLE* ACCELERATOR...

...*GENE* THERAPY...

...REPORTER *GENE*;

18/3,K/23 (Item 5 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10603704 BIOSIS NO.: 199699224849
Optimization of *biolistic* method for transient *gene* expression and production of agronomically useful transgenic Basmati rice plants.
AUTHOR: Jain Rajinder K; Jain Sunita; Wang Baiyang; Wu Ray(a)

AUTHOR ADDRESS: (a)Sect. Biochem. Mol. Cell Biol., Biotechnol. Build., Cornell Univ., Ithaca, NY 14853-2703**USA
JOURNAL: Plant Cell Reports 15 (12):p963-968 1996
ISSN: 0721-7714
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Optimization of *biolistic* method for transient *gene* expression and production of agronomically useful transgenic Basmati rice plants.

ABSTRACT: We have developed a reproducible *biolistic* procedure for the efficient transformation of embryogenic suspension cells of an improved aromatic Indica rice variety, Pusa Basmati 1. The beta-glucuronidase *gene* was used to assay transient transformation; other plasmids carrying either a potato protease inhibitor 2 (Pin2) *gene*, or a late embryogenesis-abundant protein (LEA3) *gene* from barley, were used for the optimization of *biolistic* process and transgenic plant production. After optimization of the procedure, over 600 transient transformants and at least five fertile plants showing integrative transformation were obtained per bombarded filter. At least 30% of the plants were derived from independent transformation events. The new improved procedure involves the use of a reporter *gene* or other useful genes driven by the strong rice actin 1 *gene* (Act1) promoter, osmotic pre-conditioning of cells for 24 h on medium supplemented with 0.25 M mannitol prior to bombardment, use of gold *particles* for *DNA* delivery, and use of plant regeneration medium with high (1.0%) agarose concentration.
MISCELLANEOUS TERMS: ...*BIOLISTIC* METHOD...

...*DNA* TRANSFER METHOD...

...GOLD *PARTICLE* MEDIATED *DNA* DELIVERY...

...POTATO PROTEASE INHIBITOR *GENE*; ...

...TRANSIENT *GENE* EXPRESSION

18/3,K/24 (Item 6 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10563600 BIOSIS NO.: 199699184745
Inheritance of foreign genes in transgenic bean (Phaseolus vulgaris L.) co-transformed via *particle* bombardment.
AUTHOR: Aragao F J L(a); Barros L M G; Brasileiro A C M; Ribeiro S G; Smith F D; Sanford J C; Faria J C; Rech E L
AUTHOR ADDRESS: (a)Centro Nacional de Pesquisa de Recursos Geneticos e Biotecnologia, EMBRAPA, P.O. Box 02372, Bras**Brazil
JOURNAL: Theoretical and Applied Genetics 93 (1-2):p142-150 1996
ISSN: 0040-5752
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Inheritance of foreign genes in transgenic bean (Phaseolus vulgaris L.) co-transformed via *particle* bombardment.

ABSTRACT: Exploiting the *biolistic* process we have generated stable transgenic bean (Phaseolus vulgaris L.) plants with unlinked and linked foreign genes. Co-transformation was conducted using plasmid constructions containing a fusion of the gus and neo genes, which were co-introduced with the methionine-rich 2S albumin *gene* isolated from the Brazil nut and the antisense sequence of AC1, AC2, AC3 and BC1 genes from the bean golden mosaic geminivirus. The results revealed...
MISCELLANEOUS TERMS: ...FOREIGN *GENE* INTEGRATION...

...*PARTICLE* BOMBARDMENT

18/3,K/25 (Item 7 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10445011 BIOSIS NO.: 199699066156
Transgenic plants: Production and application on the use of microspores/pollen for genetic modification.
BOOK TITLE: Advances in Pollen-Spore Research; Pollen-spore research: Emerging strategies
AUTHOR: Malik C P; Ahuja Ishita; Thind Sanjeev K; Bhatia D S
BOOK AUTHOR/EDITOR: Malik C P: Ed
AUTHOR ADDRESS: Dep. Botany, Punjab Agric. Univ., Ludhiana 141004**India
JOURNAL: Advances in Pollen-Spore Research 21p165-220 1996
BOOK PUBLISHER: Today and Tomorrow's Printers and Publishers, 24 B/5 Deshbandhu Gupta Road, Karol Bagh, New Delhi, India
ISSN: 0376-480X ISBN: 1-55528-279-2; 81-7019-422-9
DOCUMENT TYPE: Book
RECORD TYPE: Citation
LANGUAGE: English

MISCELLANEOUS TERMS: ...*BIOLISTIC* SYSTEM...

...DIRECT *DNA* TRANSFER...

...DIRECT *GENE* TRANSFER...
...*DNA* TRANSFER METHOD...

...FUNCTIONAL *GENE* FREE PASSAGE...

...*GENE* EXPRESSION...

...*GENE* INSERTION...

...*GENE* TRANSFER PROTOCOLS...

...*PARTICLE* GUN...

...POLYETHYLENE GLYCOL MEDIATED *GENE* TRANSFER...

...TUMOR-INDUCING PLASMID *DNA*;

18/3,K/26 (Item 8 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10444262 BIOSIS NO.: 199699065407
***Biolistic* transformation of yeasts.**
BOOK TITLE: Methods in Molecular Biology; Yeast protocols: Methods in cell and molecular biology
AUTHOR: Johnston Stephen A(a); Devit Michael J
BOOK AUTHOR/EDITOR: Evans I H: Ed
AUTHOR ADDRESS: (a)Southwestern Med. Cent., Univ. Texas, Dallas, TX**USA
JOURNAL: Methods in Molecular Biology 53p147-153 1996
BOOK PUBLISHER: Humana Press Inc., Suite 808, 999 Riverview Drive, Totowa, New Jersey 07512, USA
ISSN: 0097-0816 ISBN: 0-89603-319-8
DOCUMENT TYPE: Book
RECORD TYPE: Citation
LANGUAGE: English

***Biolistic* transformation of yeasts.**

MISCELLANEOUS TERMS: ...*DNA* TRANSFER...

...*PARTICLE* BOMBARDMENT...

...*RNA*

18/3,K/27 (Item 9 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10433950 BIOSIS NO.: 199699055095
Stable genetic transformation of Picea mariana (black spruce) via *particle* bombardment.
AUTHOR: Charest Pierre J; Devantier Yvonne; Lachance Denis
AUTHOR ADDRESS: Mol. Gent. Tissue Culture Group, Petawawa Natl. Forestry Inst., Natl Resour. Canada, Chalk River, ON**Canada
JOURNAL: In Vitro Cellular & Developmental Biology Plant 32 (2):p91-99 1996
ISSN: 1054-5476
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Stable genetic transformation of Picea mariana (black spruce) via *particle* bombardment.

ABSTRACT: Stable genetic transformation of Picea marina (black spruce) was obtained via *particle* bombardment into two target tissues, mature cotyledonary somatic embryos and suspensions from embryonal masses, with the *Biolistic* PDS-1000/He device. Seven transgenic embryogenic cell lines were obtained from the mature cotyledonary somatic embryos after secondary somatic embryogenesis from two different cell...

...phosphotransferase II (NPT II) genes was detected by histochemistry and fluorometry, and by ELISA in 10 of the lines. Two lines showed only NPT II *gene* expression. Four of the five lines obtained after bombardment of suspensions of embryonal masses showed lower levels of expression of GUS and NPT II. The...
MISCELLANEOUS TERMS: ...*BIOLISTIC* *PARTICLE* BOMBARDMENT...

...*DNA* TRANSFER METHOD

18/3,K/28 (Item 10 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10424414 BIOSIS NO.: 199699045559
A comparative study on the transformation of Aspergillus nidulans by microprojectile bombardment of conidia and a more conventional procedure using protoplasts treated with polyethyleneglycol.
AUTHOR: Herzog R W(a); Daniell H; Singh N K; Lemke P A
AUTHOR ADDRESS: (a)Mol. Genetics Prog., Dep. Botany Microbiol., 101 Life Sci. Build., Auburn Univ., Auburn, AL 3684**USA
JOURNAL: Applied Microbiology and Biotechnology 45 (3):p333-337 1996
ISSN: 0175-7598
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

...ABSTRACT: bombardment. The transformation frequency was somewhat lower than conventional polyethyleneglycol-mediated transformation of protoplasts. However, the percentage of stable transformants was considerably higher with the *biolistic* approach. Typically, integrations of several copies of the plasmid introduced into chromosomal

DNA were observed. The effect of several parameters, like the concentration of conidia, chamber pressure during bombardment and size of microprojectiles, on transformation frequencies were investigated and compared to previously published data on microprojectile bombardment of fungal conidia. Optimum results (6 transformants/mu-g plasmid *DNA*) were obtained when 10-8 conidia were bombarded with a helium pressure of 5.5-8.3 MPa (800-1200 lb/in-2). M5, M10 and M17 tungsten *particles* were equally efficient.
MISCELLANEOUS TERMS: ...PLASMID *DNA*; ...

...TUNGSTEN *PARTICLE*

18/3,K/29 (Item 11 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10321092 BIOSIS NO.: 199698776010
Genetic transformation of Eucalyptus globulus through biolistics: Complementary development of procedures for organogenesis from zygotic embryos and stable transformation of corresponding proliferating tissue.
AUTHOR: Serrano L; Rochange F; Semblat J P; Marque C; Teulieres C(a); Boudet A-M
AUTHOR ADDRESS: (a)Cent. Biol. Physiol. Vegetale, URA CNRS 1941, Universite Paul Sabatier, 118 route Narbonne, F-31**France
JOURNAL: Journal of Experimental Botany 47 (295):p285-290 1996
ISSN: 0022-0957
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Stable transformation of Eucalyptus globulus after *biolistic* *DNA* delivery was investigated using zygotic embryos as target material. Conditions for plant regeneration were first investigated. Six-day-old cultured embryos, which had shown to be a good target for *DNA* transient expression, appeared to be suitable for regeneration. Whole plants were recovered through organogenesis after *particle* gun bombardment. Transformation experiments were performed with a linear T-*DNA* fragment harbouring GUS and NPTII genes, using the biological and physical conditions defined for optimum transient expression. After 2 months on a culture medium, neoformed GUS-positive calli were obtained from the IT-*DNA*' bombarded embryos. GUS-expressing calli were also recovered after selection with kanamycin following bombardment. The integration of both GUS and NPTII genes into the Eucalyptus...
MISCELLANEOUS TERMS: ...GUS *GENE*; ...

...NPTII *GENE*;

18/3,K/30 (Item 12 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10240814 BIOSIS NO.: 199698695732
Transgenic plantlets of 'Chancellor' grapevine (Vitis sp.) from *biolistic* transformation of embryogenic cell suspensions.
AUTHOR: Kikkert Julie R(a); Hebert-Soule Dominique; Wallace Patricia G; Striem Michael J; Reisch Bruce I
AUTHOR ADDRESS: (a)Dep. Hortic. Sci., New York State Agric. Exp. Stn., Cornell Univ., Geneva, NY 14456**USA
JOURNAL: Plant Cell Reports 15 (5):p311-316 1996
ISSN: 0721-7714
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Transgenic plantlets of 'Chancellor' grapevine (Vitis sp.) from *biolistic* transformation of embryogenic cell suspensions.

ABSTRACT: Transgenic plantlets of 'Chancellor' grapevine (Vitis L. complex interspecific hybrid) were produced via *biolistic* transformation. Embryogenic cell suspensions were bombarded with 1 mu-m tungsten *particles* coated with pBI426 which encodes a fusion peptide between beta-glucuronidase (GUS) and neomycin phosphotransferase II (NPTII). The fusion peptide is under the control of...

...germinated and/or assayed for GUS. Of 621 embryos assayed for GUS expression, 182 (29.3%) were positive. PCR confirmed the presence of the NPTII *gene* in all 5 GUS-positive and 2 GUS-negative (bombarded) embryos tested. In gemination experiments, 15% of the embryo clusters produced at least one plant with normal shoot growth. Of 164 normal plants assayed for GUS expression, 37 (22.6%) were positive. The NPTII *gene* was amplified by PCR in 1 (of 1) GUS-positive and 4 (of 5) GUS-negative bombarded plants, but not in nonbombarded control plants. Southern blotting confirmed integration of the NPTII *gene* in all 3 of the GUS and PCR-NPTII positive plants tested. Biolistics is an efficient method for transformation of 'Chancellor' and should be applicable...
MISCELLANEOUS TERMS: *DNA* TRANSFER METHOD...

18/3,K/31 (Item 13 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10207582 BIOSIS NO.: 199698662500
Ballistics for the delivery of transforming *DNA* to mushrooms.
BOOK TITLE: Mushroom Science; Science and cultivation of edible fungi, Vols 1 and 2
AUTHOR: Moore A J(a); Challen M P(a); Elliott T J(a); Warner P J
BOOK AUTHOR/EDITOR: Elliott T J: Ed
AUTHOR ADDRESS: (a)Dep. Microbial Biotechnol., Hortic. Res. Int., Wellesbourne**UK
JOURNAL: Mushroom Science 14 (1-2):p63-70 1995
BOOK PUBLISHER: A. A. Balkema, P.O. Box 1675, 3000 BR Rotterdam, Netherlands
A. A. Balkema International Publishers, Old Post Road, Brookfield, Vermont 05036, USA
CONFERENCE/MEETING: 14th International Congress Oxford, England, UK September 17-22, 1995
ISSN: 0077-2364 ISBN: 90-5410-570-4 (set); 90-5410-571-2 (Vol. 1); 90-5410-572-0 (Vol. 2)
RECORD TYPE: Citation
LANGUAGE: English

Ballistics for the delivery of transforming *DNA* to mushrooms.
MISCELLANEOUS TERMS: *BIOLISTIC* *PARTICLE* BOMBARDMENT...

...*DNA* TRANSFER METHOD...

...*GENE* GUN

18/3,K/32 (Item 14 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10193919 BIOSIS NO.: 199698648837
***Biolistic* transformation of cucumber using embryogenic suspension cultures: Long-term expression of reporter genes.**
AUTHOR: Schulze J; Balko C; Zellner B; Koprek T; Haensch R; Nerlich A; Mendel R R(a)
AUTHOR ADDRESS: (a)Botanical Inst., Techn. Univ. Braunschweig,

Humboldstrasse 1, D-38106 Braunschweig**Germany
JOURNAL: Plant Science (Shannon) 112 (2):p197-206 1995
ISSN: 0168-9452
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

***Biolistic* transformation of cucumber using embryogenic suspension cultures: Long-term expression of reporter genes.**

ABSTRACT: The generation of transgenic cucumber (Cucumis sativus L.) plants was achieved by *biolistic* transformation of a highly embryogenic cell suspension culture using the nptII and uidA *gene*. Functional expression of the genes in transgenic plants was determined by neomycin phosphotransferase and beta-glucuronidase enzyme assays. Southern analysis of *DNA* isolated from kanamycin-resistant plants confirmed stable integration of the genes as well as multicopy integration and rearrangements. A study of *gene* expression showed activity of the uidA *gene* in plants regenerated from kanamycin-resistant calli about one year after bombardment, indicating a high stability of the nonselectable *gene*.
MISCELLANEOUS TERMS: ...*PARTICLE* GUN METHOD

18/3,K/33 (Item 15 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10177976 BIOSIS NO.: 199698632894
Use of the *biolistic* process for the analysis of nitrate-inducible promoters in transient expression assays.
AUTHOR: Godon Christian; Caboche Michel; Daniel-Vedele Francoise(a)
AUTHOR ADDRESS: (a)Lab. Biologie Cellulaire, INRA, Route Saint-Cyr, F-78026 Versailles Cedex**France
JOURNAL: Plant Science (Limerick) 111 (2):p209-218 1995
ISSN: 0168-9452
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Use of the *biolistic* process for the analysis of nitrate-inducible promoters in transient expression assays.

...ABSTRACT: under the control of nitrate reductase or nitrite reductase promoters measured in bombarded leaf tissues was compared to transcript levels expressed from the resident Nia *gene* or to that of a reporter *gene* under the control of nitrite reductase promoter stably inserted into the nuclear genome. It was found that transient assays do not reflect the expression of...
...sequences. Particularly striking was the absence of repression of the reporter genes by ammonium or glutamine in transient assays. The limits of the use of *particle* bombardment in transient experiments are discussed. One of the different hypotheses explaining the data involved a model of a negative control mediating the repression of...
MISCELLANEOUS TERMS: ...*GENE* EXPRESSION...

...*PARTICLE* GUN...

...REPORTER *GENE* REPRESSION

18/3,K/34 (Item 16 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10177904 BIOSIS NO.: 199698632822

An analysis of the relative activities of a number of promoter constructs from genes which are expressed during late pollen development as determined by *particle* bombardment.

AUTHOR: Lonsdale D M(a); Allen R L; Belostotsky D; Ghose T K; Harvey A J; Rogers H J; Tebbut S J; Trick M
AUTHOR ADDRESS: (a)Dep. Genetics, Univ. Ga., Athens, GA 3062**USA
JOURNAL: Plant Cell Reports 15 (1-2):p154-158 1995
ISSN: 0721-7714
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

An analysis of the relative activities of a number of promoter constructs from genes which are expressed during late pollen development as determined by *particle* bombardment.

ABSTRACT: The promoters of a tobacco actin *gene*, a tobacco pectate lyase, a tobacco and maize polygalacturonase and a Brassica S-locus related *gene* have been fused to the beta-glucuronidase reporter *gene* and their activities determined by *biolistic* transient assay in tobacco pollen. In stably transformed tobacco all the transgenes with the exception of Cauliflower Mosaic Virus-35S-beta-glucuronidase appear to express...
MISCELLANEOUS TERMS: BRASSICA S-LOCUS RELATED *GENE*; *DNA* TRANSFER METHOD...

...*GENE* FUSION...

...MAIZE POLYGALACTURONASE *GENE*; ...

...TOBACCO ACTIN *GENE*; ...

...TOBACCO PECTATE LYASE *GENE*; ...

...TOBACCO POLYGALACTURONASE *GENE*

18/3,K/35 (Item 17 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10138856 BIOSIS NO.: 199698593774
Transient *gene* expression in transformed banana (Musa cv. Bluggoe) protoplasts and embryogenic cell suspensions.

AUTHOR: Sagi Laszlo(a); Remy Serge(a); Verelst Bert(a); Panis Bart(a); Cammue Bruno P A; Volckaert Guido; Swennen Rony(a)
AUTHOR ADDRESS: (a)Lab. Tropical Crop Husbandry, Catholic Univ. Leuven, Leuven**Belgium
JOURNAL: Euphytica 85 (1-3):p89-95 1995
ISSN: 0014-2336
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Transient *gene* expression in transformed banana (Musa cv. Bluggoe) protoplasts and embryogenic cell suspensions.

...ABSTRACT: have been optimized. Firstly, regenerable protoplasts isolated from embryogenic cell suspensions of the cultivar Bluggoe have been used for the introduction of several chimaeric uidA *gene* constructs by electroporation. With the inclusion of polyethylene glycol and heat shock, the frequency of transiently expressing protoplasts reached 1.8% as shown by an...

...leader sequence (pBI-426) induced the highest expression rate among the constructs tested. Embryogenic cell suspensions of cv. Bluggoe have also

been bombarded with accelerated *particles* coated with a high expression uidA *gene* construct (pEmuGN) using a *biolistic* gun. After a partial optimization of the procedure, transient GUS assays reproducibly demonstrated the presence of 400 blue foci in 30 mu-l of settled... MISCELLANEOUS TERMS: *BIOLISTIC* TRANSFORMATION...

18/3,K/36 (Item 18 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10050444 BIOSIS NO.: 199598505362
UidA *gene* transfer and expression in maize microspores using the *biolistic* method.
AUTHOR: Jardinaud M F; Souvre A(a); Alibert G; Beckert M
AUTHOR ADDRESS: (a)Lab. de Biotechnol. et Amelioration des Plantes, INP-ENSAT, 145 Avenue de Muret, F-31076 Toulous**France
JOURNAL: Protoplasma 187 (1-4):p138-143 1995
ISSN: 0033-183X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

UidA *gene* transfer and expression in maize microspores using the *biolistic* method.

...ABSTRACT: hybrid of maize. Using the isolated microspore culture technique, a 9 times 10-5, plant regeneration frequency was obtained. Maize microspores were bombarded with tungsten *particles* using a PDS He/1000 apparatus. GUS expression in the microspores was maximum with 1.1 mu-m diameter tungsten microprojectiles for 1100 and 1350 psi helium pressures at a 6 cm distance between the launch point and the target cells. Increasing the amount of *DNA* coated on the microparticles from 1.66 to 4 mu-g *DNA*/mg of *particles* allowed a two-fold and four-fold increase of the GUS-expressing microspore frequency for 1100 and 1350 psi helium pressure bombardment, respectively. Optimal concentration... MISCELLANEOUS TERMS: *DNA* TRANSFER METHOD...

...*GENE* EXPRESSION

18/3,K/37 (Item 19 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

09951839 BIOSIS NO.: 199598406757
Transient chimeric *gene* expression in pollen of five conifer species following microparticle bombardment.
AUTHOR: Hay Irene; Lachance Denis; Von Aderkas Patrick; Charest Pierre J(a)
AUTHOR ADDRESS: (a)Molecular Genetics Tissue Culture Group, Petawawa Natl. Forestry Inst., Natural Resources Canada**Canada
JOURNAL: Canadian Journal of Forest Research 24 (12):p2417-2423 1994
ISSN: 0045-5067
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English; French

Transient chimeric *gene* expression in pollen of five conifer species following microparticle bombardment.

...ABSTRACT: Spach), western hemlock (Tsuga heterophylla (Raf.) Sarg.), jack pine (Pinus banksiana Lamb.), and black spruce (Picea mariana (Mill.) B.S.P.) was bombarded with gold *particles* coated with four different plasmid constructions, pRT99GUS, pBM113Kp, pAct1-D, and pGA984, using the *biolistic* PDS-1000/He device. A protocol was devised for

efficient *gene* transfer and *gene* expression assay in pollen. False positive results for expression of the beta-glucuronidase (GUS) *gene* assayed with the substrate X-glucuronide were observed with pollen of yellow cypress, western hemlock, and lodgepole pine. The highest levels of transient GUS *gene* expression were obtained with plasmid pBM113Kp, which carried the GUS *gene* under the control of the wheat abscisic acid inducible early methionine promoter. The plasmids pRT99GUS (35S promoter) and pAct1-D (rice actin promoter) yielded similar intermediate revels of transient GUS *gene* expression. The pollen-specific promoter of the alpha-tubulin *gene* from Arabidopsis thaliana (pGA984) yielded the lowest levels of *gene* expression in pollen. Of the four species, yellow cypress showed the lowest levels of transient GUS *gene* expression and black spruce yielded the highest levels. The neomycin phosphotransferase II (NPT II) *gene* was also tested as a reporter *gene* for pollen transformation and was easily assayed via ELISA. The fusion *gene* between NPT II and GUS genes was detected at a lower level than the nonfused NPT II *gene* when under the control of the same 35S promoter. The method devised here could be used for the study of tissue-specific *gene* expression in conifer pollen.
MISCELLANEOUS TERMS: *DNA* TRANSFER METHOD...

...*GENE* TRANSFER

18/3,K/38 (Item 20 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

09812252 BIOSIS NO.: 199598267170
Stable transformation of barley callus using *biolistic* *particle* bombardment and the phosphinothricin acetyltransferase (bar) *gene*.
AUTHOR: Stiff Carol M(a); Kilian Andrzej; Zhou Huaping; Kudrna David A; Kleinhofs Andris
AUTHOR ADDRESS: (a)Dep. Genet. Cell Biol., Washington State Univ., Pullman, WA 99164-4234**USA
JOURNAL: Plant Cell Tissue and Organ Culture 40 (3):p243-248 1995
ISSN: 0167-6857
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Stable transformation of barley callus using *biolistic* *particle* bombardment and the phosphinothricin acetyltransferase (bar) *gene*.

ABSTRACT: Suspension culture cells of barley (Hordeum vulgare L. cv. Klages) were collected on filters and bombarded with gold *particles* carrying the Basta resistance (bar) *gene*, or both bar and the beta-glucuronidase (uidA) genes in a *Biolistic* *Particle* Accelerator. Filters carrying the bombarded tissues were selected on basal medium with increasing concentrations (maximum of 200 mg l-1) of phosphinothricin. Surviving calli were assayed for the presence of phosphinothricin acetyltransferase activity. All positive calli were shown to have the bar *gene* integrated into their genome. Nine independent stable transformation events have been analyzed with substantial variation in the integration pattern and transgene copy number. Some albino...
MISCELLANEOUS TERMS: ...*DNA* TRANSFER METHOD

18/3,K/39 (Item 21 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

09731675 BIOSIS NO.: 199598186593
Transient *gene* expression in sunflower (Helianthus annuus L.) following microprojectile bombardment.
AUTHOR: Hunold Reiner; Burrus Monique; Bronner Roberte; Duret Jean-Pierre;

Hahne Guenther(a)
AUTHOR ADDRESS: (a)Inst. Biol. Mol. Plantes, CNRS Univ. Louis Pasteur, 12 rue du General Zimmer, F-67084 Strasbourg**France
JOURNAL: Plant Science (Limerick) 105 (1):p95-109 1995
ISSN: 0168-9452
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Transient *gene* expression in sunflower (Helianthus annuus L.) following microprojectile bombardment.

ABSTRACT: Transient expression of the uidA *gene*, coding for beta-glucuronidase (GUS) and driven by different promoters, has been induced in sunflower cotyledonary explants and immature zygotic embryos of different developmental stages using two *particle* delivery systems. Explants were evaluated for expression of beta-glucuronidase activity 3 days, 2, and 4 weeks post bombardment. Immature embryos were more suitable for...

...observed in the epidermal layer, while in immature embryos they were located between the epidermis and the fourth mesophyll layer. The performance of the two *biolistic* equipments was comparable. Under any condition, GUS expression declined with increasing culture time.
MISCELLANEOUS TERMS: ...*DNA* TRANSFER METHOD...

...*PARTICLE* GUN

18/3,K/40 (Item 22 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

09637609 BIOSIS NO.: 199598092527
A *biolistic* approach for the transfer and expression of a gusA reporter *gene* in embryogenic cultures of Pinus radiata.
AUTHOR: Walter Christian; Smith Dale R(a); Connett Marie B; Grace Lynette; White Derek W R
AUTHOR ADDRESS: (a)New Zealand Forest Res. Inst., Private Gag 3020, Rotorua **New Zealand
JOURNAL: Plant Cell Reports 14 (2-3):p69-74 1994
ISSN: 0721-7714
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

A *biolistic* approach for the transfer and expression of a gusA reporter *gene* in embryogenic cultures of Pinus radiata.

ABSTRACT: The *biolistic* *particle* delivery system was used for the delivery of *DNA* into embryogenic tissue culture cells of Pinus radiata D. Don. Several experiments with varying parameters were performed to increase the delivery efficiency. Six different controlling elements were cloned upstream of the beta-glucuronidase coding sequence (gusA reporter *gene*) and transient expression of the gusA reporter *gene* was compared three days after bombardment. The results clearly indicate a decrease in transient expression as follows: pEmu-derivatives with the ocs-enhancer-element gt...

...of blue spots 10-14 days after bombardment. A few blue clumps however, were still detected 35 days after shooting. Embryo initials expressing the gusA *gene* in all cells were also detected. The results suggest that it will be possible to develop a reliable *biolistic* protocol for stable integration of genes into Pinus radiata embryogenic cultures which are capable of plant regeneration.
MISCELLANEOUS TERMS: *DNA* TRANSFER METHOD...

...*PARTICLE* DELIVERY SYSTEM

18/3,K/41 (Item 23 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

09583377 BIOSIS NO.: 199598038295
Induction of alloreactive cytotoxic T lymphocytes by intra-splenic immunization with allogeneic class I major histocompatibility complex *DNA* and DC-chol cationic liposomes.
AUTHOR: Hui Kam M(a); Sabapathy T Kanaga; Oei Audrey A; Singhal Arun; Huang Leaf
AUTHOR ADDRESS: (a)Mol. Immunol. Lab., Inst. Mol. Cell Biol., National University Singapore, Kent Ridge, 0511**Singapore
JOURNAL: Journal of Liposome Research 4 (3):p1075-1090 1994
ISSN: 0898-2104
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Induction of alloreactive cytotoxic T lymphocytes by intra-splenic immunization with allogeneic class I major histocompatibility complex *DNA* and DC-chol cationic liposomes.

...ABSTRACT: can evoke a specific immune response against them. We have expressed allogeneic class I major histocompatibility complex (MHC) molecules on tumor cells, through ex vivo *DNA*-mediated *gene* transfer. These molecules are potent immuno-modulators for the stimulation of strong immune reactions against certain malignancies. In order to achieve efficient *gene* delivery to tumor cells in vivo, we have compared the efficiencies of *gene* transfer into mammalian tumor cells by the *biolistic* *particle* delivery system and cationic liposomes. In this report, we have demonstrated that cationic liposomes prepared by DC-chol and DOPE gives the best efficiency of...

...b allo-reactive cytotoxic T lymphocyte (CTL) response could be generated following in vivo immunization of AKR/J mouse spleens with the H-2K-b *gene* and DC-chol cationic liposomes. The direct immunization of mouse spleens to induce cell-mediated immunity against exogenous antigens may allow alternative treatment strategies for...
MISCELLANEOUS TERMS: *BIOLISTIC* *PARTICLE* DELIVERY SYSTEM...

...*GENE* TRANSFER

18/3,K/42 (Item 24 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

09440744 BIOSIS NO.: 199497449114
Evaluation of peanut (Arachis hypogaea L.) leaflets from mature zygotic embryos as recipient tissue for *biolistic* *gene* transfer.
AUTHOR: Clemente Thomas E; Robertson Dominique; Isleib Thomas G; Beute Marvin K; Weissinger Arthur K(a)
AUTHOR ADDRESS: (a)Dep. Crop Sci. North, Carolina State Univ., Raleigh, NC 27695-7620**USA
JOURNAL: Transgenic Research 1 (6):p275-284 1992
ISSN: 0962-8819
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Evaluation of peanut (Arachis hypogaea L.) leaflets from mature zygotic embryos as recipient tissue for *biolistic* *gene* transfer.

ABSTRACT: Leaflets from mature peanut embryos are a useful recipient tissue for *biolistic* *DNA* transfer. Fertile plants were regenerated from leaflets from genotypes representing all botanical types of peanut. Regeneration frequency was strongly influenced by genotype. NPT II and GUS chimaeric *gene* fusions, driven by the CaMV 35S promoter, were expressed transiently following *biolistic* delivery to unexpanded leaflets. Bombardment conditions affecting transient expression frequency were determined using a prototype of the Bio Rad PDS 1000/He helium-powered *particle* acceleration apparatus. Stably transformed calli were derived routinely from leaflet tissue bombarded with the NPT II *gene* and subsequently cultured on kanamycin. Several plants have been regenerated from treated explants under kanamycin selection. Thus far, none of these has been stably transformed...
MISCELLANEOUS TERMS: BETA - GLUCURONIDASE *GENE*; ...

...CHIMERIC *GENE* FUSIONS...

...EXOGENOUS *DNA* TRANSMISSION...

...NPT-2 *GENE*;

18/3,K/43 (Item 25 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

09215456 BIOSIS NO.: 199497223826
Genetic transformation of peach tissues by *particle* bombardment.
AUTHOR: Ye Xiaojian(a); Brown Susan K; Scorza Ralph; Cordts John; Sanford John C
AUTHOR ADDRESS: (a)Biol. Dep., Dartmouth Coll., Hanover, NH 03755**USA
JOURNAL: Journal of the American Society for Horticultural Science 119 (2):p367-373 1994
ISSN: 0003-1062
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Genetic transformation of peach tissues by *particle* bombardment.

ABSTRACT: Physical and biological parameters affecting the efficiency of *biolistic* transformation of peach were optimized using beta-glucuronidase (GUS) as a reporter *gene*, such that efficiency of transient GUS expression in peach embryo-derived callus was increased markedly. Transient expression was also obtained in embryonic axes, immature embryos, cotyledons, shoot tips, and leaves of peach. Stable expression of a fusion *gene* combining neomycin phosphotransferase (NPTII) and beta-glucuronidase activities has been achieved in peach embryo calli. Sixty-five kanamycin-resistant callus lines were obtained from 114...

...GUS assay and PCR analysis. All seven lines showed GUS activity. PCR analysis confirmed that, in most of the putative transformants, the chimeric GUS/NPTII *gene* had been incorporated into the peach genome. The transgenic callus lines were very weakly morphogenic, presumably because the callus was 5 years old and no transgenic shoots developed from this callus. Results of this research demonstrate the feasibility of obtaining stable transgenic peach tissue by *biolistic* transformation.
MISCELLANEOUS TERMS: ...*DNA* TRANSFER METHOD

18/3,K/44 (Item 26 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

09215243 BIOSIS NO.: 199497223613
***Biolistic* delivery of foreign *DNA* or genomic transcripts of plant virus full-length cDNA clones into monocotyledonous and dicotyledonous plant tissues.**
AUTHOR: Hiruki Chuji(a); Kakuta Hideo; Hashidoko Yasuyuki; Ge Zhongming(a); Figueiredo Gina(a); Mizutani Junya
AUTHOR ADDRESS: (a)Dep. Plant Sci., Univ. Alberta, Edmonton, Alberta T6G 2P5**Canada
JOURNAL: Proceedings of the Japan Academy Series B Physical and Biological Sciences 69 (9):p244-247 1993
ISSN: 0386-2208
DOCUMENT TYPE: Article
RECORD TYPE: Citation
LANGUAGE: English

***Biolistic* delivery of foreign *DNA* or genomic transcripts of plant virus full-length cDNA clones into monocotyledonous and dicotyledonous plant tissues.**
MISCELLANEOUS TERMS: COMPLEMENTARY *DNA*; *DNA* TRANSFER METHOD...

...*GENE* EXPRESSION...
...*PARTICLE* GUN

18/3,K/45 (Item 27 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

09163525 BIOSIS NO.: 199497171895
Microprojectile-mediated *DNA* delivery to the Salicaceae family.
AUTHOR: Devantier Yvonne A; Moffat Barbara; Jones Catherine; Charest Pierre J(a)
AUTHOR ADDRESS: (a)Mol. Genetics and Tissue Culture Group, Petawawa Natl. Forestry Inst., Forestry Can., Chalk Rive**Canada
JOURNAL: Canadian Journal of Botany 71 (11):p1458-1466 1993
ISSN: 0008-4026
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English; French

Microprojectile-mediated *DNA* delivery to the Salicaceae family.

ABSTRACT: A transient *gene* expression system was developed for the Salicaceae family using microprojectile-mediated *DNA* delivery (*Biolistic*) to cell suspensions. Using Populus nigra times Populus maximowiczii line NM1, 10 variables were optimized. Optimum transient *gene* expression under the 10 conditions tested was obtained with a 7- to 9-day-old cell suspension. Highest transient levels were observed with samples positioned 13.5 cm from the stopping plate and bombarded with 1.6-mu-m gold *particles* coated with 1 mu-g of *DNA* precipitated with CaCl-2. Assaying for beta-glucuronidase *gene* expression was performed 1 day after bombardment. The fate of the microparticles in the bombarded cells was studied, showing that 58.9% of cells expressing the beta-glucuronidase *gene* had microparticles located in the nucleus or its vicinity and the remaining cells had microparticles in the cytoplasm. Cell suspensions from five different lines (P...

...NM6, Populus deltoides times P. nigra line DN106, Populus tremula times Populus alba line 7171-B4, and Salix alba sanguinea line SA-2) yielded transient *gene* expression. The relative strengths of beta-glucuronidase expression in the lines tested were NM1 = 7171-B4 gt NM6 gt DN 106 gt SA-2. Six plasmid constructions were also tested in line NM1 for transient beta-glucuronidase *gene* expression. The x-glucuronide histochemical assay did not reveal any differences, but the methyl umbelliferone glucuronide fluorescent assay yielded the following

relative levels of transient *gene* expression with the different promoter sequences: 35S-35S-AMV enhancer = 35S-AMV enhancer gt 35S-35S = 35S-35S-AMV enhancer with the beta-glucuronidase - neomycin phosphotransferase fusion gt 35S. Four transgenic cell lines of P. nigra times P. maximowiczii were characterized for kanamycin resistance and neomycin phosphotransferase II *gene* activity. Polymerase chain reaction and Southern hybridization analyses indicated the presence of the beta-glucuronidase and neomycin phosphotransferase II genes in the genome of three...
MISCELLANEOUS TERMS: ...*GENE* EXPRESSION

18/3,K/46 (Item 28 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

09131891 BIOSIS NO.: 199497140261
***Biolistic* transformation of tobacco and maize suspension cells using bacterial cells as microprojectiles.**
AUTHOR: Rasmussen Jeanette L(a); Kikkert Julie R; Roy Mihir K; Sanford John C
AUTHOR ADDRESS: (a)Dep. Biol. Sci., SUNY Plattsburgh, Plattsburgh, NY 12901 **USA
JOURNAL: Plant Cell Reports 13 (3-4):p212-217 1994
ISSN: 0721-7714
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

***Biolistic* transformation of tobacco and maize suspension cells using bacterial cells as microprojectiles.**

ABSTRACT: We have used both Escherichia coli cells and Agrobacterium tumefaciens cells as microprojectiles to deliver *DNA* into suspension-cultured tobacco (Nicotiana tabacum L. line NT1) cells using a helium-powered *biolistic* device. In addition, E. coli cells were used as microprojectiles for the transformation of suspension-cultured maize (Zea mays cv. Black Mexican Sweet) cells. Pretreating the bacterial cells with phenol at a concentration of 1.0%, and combining the bacterial cells with tungsten *particles* increased the rates of transformation. In N. tabacum, we obtained hundreds of transient transformants per bombardment, but were unable to recover any stable transformants. In...
MISCELLANEOUS TERMS: ...*GENE* GUN...

...*GENE* TRANSFER METHOD...

...*PARTICLE* GUN

18/3,K/47 (Item 29 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

09037124 BIOSIS NO.: 199497045494
Expression of GUS-*gene* in monocot temperate grasses by an improved *particle* gun.
AUTHOR: Horikawa Yoh(a); Ohi Hiroyuki(a); Kakuta Hideo
AUTHOR ADDRESS: (a)Lab. Forage Crop Sci., Obihiro Univ. Agric. Veterinary Med., Obihiro, Hokkaido 080**Japan
JOURNAL: Research Bulletin of Obihiro University Natural Science 18 (3):p 143-146 1993
ISSN: 0919-3359
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English; Japanese

Expression of GUS-*gene* in monocot temperate grasses by an improved *particle* gun.

ABSTRACT: Successful delivery of foreign genes to intact calluses of monocot orchardgrass (Dactylis glomerata L.) and timothy (Phleum pratense L.) was demonstrated by using an improved *particle* gun. This *biolistic* device was equipped with a polyacetal macroprojectile with GUS - *gene* coated gold *particles*, driven by gas pressure from a helium cylinder controlled by a solenoid valve. The *particlegun* is a widely useful transformation method capable of overcoming the host - range restrictions of Agrobacterium and the regeneration problems of protoplast transformation.
MISCELLANEOUS TERMS: ...*GENE* TRANSFER METHOD...

...TRANSIENT *GENE* EXPRESSION

18/3,K/48 (Item 30 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08960503 BIOSIS NO.: 199396112004
Optimization of *biolistic* transformation of embryogenic grape cell suspensions.
AUTHOR: Hebert Dominique; Kikkert Julie R; Smith Franzine D; Reisch Bruce I (a)
AUTHOR ADDRESS: (a)Dep. Horticultural Sci., New York State Agricultural Experimental Staton, Cornell Univ., Geneva,**USA
JOURNAL: Plant Cell Reports 12 (10):p585-589 1993
ISSN: 0721-7714
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Optimization of *biolistic* transformation of embryogenic grape cell suspensions.

ABSTRACT: Embryogenic suspensions of 'Chancellor' (Vitis L. complex interspecific hybrid) were bombarded with tungsten *particles* coated with plasmid pBI426 encoding beta-glucuronidase (GUS) and neomycin phosphotransferase (NPTII) which results in kanamycin resistance. Two d after bombardment, cultures were placed on semi-solid medium containing either 8.6 or 17.2 mu-M kanamycin. Factors that affect *biolistic* transformation rates were studied. Tungsten microprojectiles with a mean diameter of 1.07 mu-m (M10) resulted in more transient *gene* expression than 0.771 mu-m diameter *particles*. Using M10 *particles*, helium pressures of 1000 and 1200 psi yielded more GUS-expressing colonies per plate than did 800 psi 2 d following bombardment. The number of transformants present after 34 d was not affected by the helium pressure. The distance between the *particle* launch site and the target cells, and the number of days between the last cell subculture and bombardment, did not affect the numbers of transient...

...three fold compared with plates wrapped with a porous venting tape. With up to 850 transformed callus colonies per plate 23 d after bombardment, the *biolistic* device holds much promise as a method to achieve stable transformation of grapevines.

18/3,K/49 (Item 31 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08900059 BIOSIS NO.: 199396051560
Stable transformation of the food yam Dioscorea alata L. by *particle*

bombardment.
AUTHOR: Tor Mahmut(a); Ainsworth Charles; Mantell Sinclair H
AUTHOR ADDRESS: (a)Wye College, Univ. London, Wye, Ashford, Kent TN25 5AH** UK
JOURNAL: Plant Cell Reports 12 (7-8):p468-473 1993
ISSN: 0721-7714
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Stable transformation of the food yam Dioscorea alata L. by *particle* bombardment.

ABSTRACT: A *biolistic* *particle* gun was used to deliver genetic material into intact yam cells. Cultured suspension cells of D. alata were bombarded with microprojectiles coated with pBI221.2 *DNA* and histochemical assays were carried out to show transient GUS expression in bombarded cells. Stably transformed D. alata cells were recovered from cultured cells after...
...activity in each line was determined fluorometrically. The use of a specific GUT inhibitor showed that the GUS activity was due to the introduced uidA *gene* rather than to any intrinsic GUS-like activity originating from the plant. Incorporation of the introduced *DNA* into the plant genomic *DNA* was confirmed by Southern analysis.
MISCELLANEOUS TERMS: ...COMPLEMENTARY *DNA*;

18/3,K/50 (Item 32 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08899762 BIOSIS NO.: 199396051263
The *Biolistic* PDS-1000/He device.
AUTHOR: Kikkert Julie Russell
AUTHOR ADDRESS: Cornell Univ., New York State Agric. Exp. Stn., Dep. Hortic. Sci., Geneva, NY 14456**USA
JOURNAL: Plant Cell Tissue and Organ Culture 33 (3):p221-226 1993
ISSN: 0167-6857
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

The *Biolistic* PDS-1000/He device.

ABSTRACT: This paper describes the design, operation, and performance of the *Biolistic* PDS-1000/He device, which is used to transform living organisms with foreign *DNA*. *DNA* is delivered to cells in association with microscopic metal *particles*, called microcarriers, that are propelled at high velocity towards target tissues. The microcarriers are accelerated on a plastic cylinder, called a macrocarrier, which is driven
...
...helium gas. The effectiveness of the PDS-1000/He device was tested by bombarding tobacco cell suspension cultures with microcarriers that were coated with plasmid *DNA* containing the B-glucuronidase (GUS) and neomycin phosphotransferase II (NPTII) genes. Two days after bombardment, there were 6835 +- 594 cell clusters per petri plate that expressed the GUS *gene*. Kanamycin resistant colonies were observed 6 to 8 weeks after bombardment, at a rate of 838 +- 134 colonies per bombarded plate.

18/3,K/51 (Item 33 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08883999 BIOSIS NO.: 199396035500
Inoculation of peppers with infectious clones of a new geminivirus by a

***biolistic* procedure.**
AUTHOR: Garzon-Tiznado J Antonio; Torres-Pacheco Irineo; Ascencio-Ibanez J Trinidad; Herrera-Estrella Luis; Rivera-Bustamante Rafael F(a)
AUTHOR ADDRESS: (a)Dep. Ingenieria Genetica, Centro Investigaciones y de Estudios Avanzados del IPN, Unidad Irapuat**Mexico
JOURNAL: Phytopathology 83 (5):p514-521 1993
ISSN: 0031-949X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Inoculation of peppers with infectious clones of a new geminivirus by a *biolistic* procedure.

...ABSTRACT: tentatively named pepper huasteco virus (PHV). The cloned viral DNAs were infectious when inoculated by bombardment into pepper plants. The bombardment was accomplished using tungsten *particles* coated with *DNA* from both genomic components. The *particles* were delivered using a helium pressure-based apparatus (*biolistic* procedure). Replication of the viral *DNA* in plants was confirmed by Southern analysis and polymerase chain reaction (PCR) amplification of the coat-protein *gene*. Plants inoculated with either the A (plasmid pIGV22) or B (plasmid pIGV21) component alone did not develop any visible symptoms, and viral *DNA* was not detected by molecular hybridization. The advantages of this new inoculation procedure are discussed.

18/3,K/52 (Item 34 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08853281 BIOSIS NO.: 199396004782
An improved rice transformation system using the *biolistic* methods.
AUTHOR: Li Liangcai; Qu Rongda(a); De Kochko Aleandre; Fauquet Claude; Beachy Roger N
AUTHOR ADDRESS: (a)Inst. Genetics, Academia Sinica, Beijing**China
JOURNAL: Plant Cell Reports 12 (5):p250-255 1993
ISSN: 0721-7714
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

An improved rice transformation system using the *biolistic* methods.

ABSTRACT: Immature embryos and embryogenic calli of rice, both japonica and indica subspecies, were bombarded with tungsten *particles* coated with plasmid *DNA* that contained a *gene* encoding hygromycin phosphotransferase (HPH, conferring hygromycin resistance) driven by the CaMV 35S promoter or Agrobacterium tumefaciens NOS promoter. Putatively transformed cell clusters were identified from...

...an average of one transgenic plant was produced from 1.3 immature embryos or from 5 pieces of embryogenic calli bombarded. Integration of the introduced *gene* into the plant genome, and inheritance to the offspring were demonstrated. By using this procedure, we have produced several hundred transgenic plants. The procedure described...

18/3,K/53 (Item 35 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08818487 BIOSIS NO.: 199395107838
Microprojectile-mediated *DNA* delivery in haploid and diploid embryogenic cells of Larix spp.
AUTHOR: Duchesne Luc C; Lelu Marie-Anne; Von Aderkas Patrick; Charest

Pierre J(a)
AUTHOR ADDRESS: (a)Mol. Genet. and Tissue Culture Group, Forest Canada, Petawawa National Forestry Inst., P.O. Box **SA
JOURNAL: Canadian Journal of Forest Research 23 (2):p312-316 1993
ISSN: 0045-5067
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English; French

Microprojectile-mediated *DNA* delivery in haploid and diploid embryogenic cells of Larix spp.

ABSTRACT: A *particle* bombardment protocol using the Dupont *Biolistic* *particle* delivery system and the beta-glucuronidase reporter *gene* was developed for embryognic cell lines of Larix. Comparison of four sizes of tungsten microprojectiles showed the hgihest transient *gene* expression with 1.11 mu-m diameter *particles*. The highest beta-glucuronidase transient *gene* activity was in cells bombardment 5 and 6 days after subculturing to fresh media. Comparison of 22 different cell lines of haploid and diploid Larix decidua, Larix leptolepis, Larix times leptoeuropae, and Larix times eurolepis showed variation among the cell lines in beta-glucuronidase *gene* activity, embryogenesis, and cell growth. In diploid lines, the levels of transient *gene* expression were higher with youngest lines; however, this trend was not distinguishable in haploid lines.
MISCELLANEOUS TERMS: ...*GENE* EXPRESSION

18/3,K/54 (Item 36 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08783730 BIOSIS NO.: 199395073081
Expression of luciferase and beta-glucuronidase in Pinus radiata suspension cells using electroporation and *particle* bombardment.
AUTHOR: Campbell M A; Kinlaw C S; Neale D B
AUTHOR ADDRESS: Inst. Forest Genet., Pacific Southwest Res. Stn., USDA Forest Serv., P.O. Box 245, Berkeley, CA 9470**USA
JOURNAL: Canadian Journal of Forest Research 22 (12):p2014-2018 1992
ISSN: 0045-5067
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English; French

Expression of luciferase and beta-glucuronidase in Pinus radiata suspension cells using electroporation and *particle* bombardment.

ABSTRACT: The reporter *gene* beta-glucuronidase, under the control of the 35S promoter from cauliflower mosaic virus, was introduced into a suspension-cultured cell line of Pinus radiata using electroporation and *particle* bombardment. Electroporation of suspension-derived protoplasts in the presence of pBI221 resulted in transient beta-glucuronidase activity. Maximum levels of beta-glucuronidase activity were obtained...

...and metabolic activity, as determined by fluorescein diacetate staining and chlorophyll fluorescence. Electroporation of P. radiata protoplasts with a plasmid containing a firefly luciferase reporter *gene* driven by a 35S promoter resulted in expression levels that were 2-3.5 times that of background. *Biolistic* transfer of a beta-glucuronidase coding sequence drive by a 35S promoter resulted in histochemically detectable beta-glucuronidase activity in P. radiata suspension culture cells...

...radiatta extracts containing less than 100 mu-g of total soluble protein did not exhibit any inhibitory effect. These studies establish two

different methods of *gene* transfer into a P. radiata cell line and will contribute to our ability to examine a variety of promoter types associated with transcriptional regulation in...
MISCELLANEOUS TERMS: ...*GENE* EXPRESSION

18/3,K/55 (Item 37 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08671238 BIOSIS NO.: 199345089313
Viral genome delivery into detached and intact leaf tissues of Vigna unguiculata by *RNA*-coated gold *particles* accelerated by high velocity macroprojectiles.
AUTHOR: Hiruki C(a); Kakuta H; Ge Z(a); Figueiredo G(a); Hashidoko Y; Mizutani J
AUTHOR ADDRESS: (a)Dep. Plant Sci., Univ. Alberta, Edmonton, AB T6G 2P5
JOURNAL: Canadian Journal of Plant Pathology 15 (1):p55 1993
CONFERENCE/MEETING: Meeting of the Plant Pathology Society of Alberta Olds, Alberta, Canada November 4-6, 1992
ISSN: 0706-0661
RECORD TYPE: Citation
LANGUAGE: English

Viral genome delivery into detached and intact leaf tissues of Vigna unguiculata by *RNA*-coated gold *particles* accelerated by high velocity macroprojectiles.
MISCELLANEOUS TERMS: ...*BIOLISTIC* DEVICE

18/3,K/56 (Item 38 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08616389 BIOSIS NO.: 199345034464
***Gene* transfer in higher plants through *biolistic* delivery.**
AUTHOR: Pal Amita
AUTHOR ADDRESS: Plant Mol. and Cell. Genet. Unit, Bose Inst., P 1/12 CIT Scheme VII M, Calcutta 700 054**India
JOURNAL: Proceedings of the Indian National Science Academy Part B Biological Sciences 59 (1):p87-94 1993
ISSN: 0073-6600
DOCUMENT TYPE: Article
RECORD TYPE: Citation
LANGUAGE: English

***Gene* transfer in higher plants through *biolistic* delivery.**
MISCELLANEOUS TERMS: *DNA* DELIVERY...

...*PARTICLE* GUN

18/3,K/57 (Item 39 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08360164 BIOSIS NO.: 000094100687
TRANSIENT EXPRESSION OF THE BETA GLUCURONIDASE *GENE* INTRODUCED INTO UROMYCES-APPENDICULATUS UREDOSPORES BY *PARTICLE* BOMBARDMENT
AUTHOR: BHAIRI S M; STAPLES R C
AUTHOR ADDRESS: BOYCE THOMPSON INST. PLANT RES., TOWER ROAD, ITHACA, N.Y. 14853.
JOURNAL: PHYTOPATHOLOGY 82 (9). 1992. 986-989.
FULL JOURNAL NAME: Phytopathology
CODEN: PHYTA
RECORD TYPE: Abstract

LANGUAGE: ENGLISH

TRANSIENT EXPRESSION OF THE BETA GLUCURONIDASE *GENE* INTRODUCED INTO UROMYCES-APPENDICULATUS UREDOSPORES BY *PARTICLE* BOMBARDMENT

ABSTRACT: Plasmids carrying the .beta.-glucuronidase *gene* (GUS) under the control of the promoter from the previously cloned *gene* specific for infection structure, INF24, were constructed by inserting the INF24 promoter in front of the GUS *gene* carried in the Bluescript vector. These plasmid DNAs were then introduced into uredospores of the bean rust fungus, Uromyces appendiculatus; the *biolistic* *particle* delivery system was used. With germination and differentiation on collodion membranes, GUS activity assayed histochemically with X-gluc was evident only in those germlings that...

18/3,K/58 (Item 40 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08248408 BIOSIS NO.: 000094039756
MAJOR IMPROVEMENTS IN *BIOLISTIC* TRANSFORMATION OF SUSPENSION-CULTURED TOBACCO CELLS
AUTHOR: RUSSELL J A; ROY M K; SANFORD J C
AUTHOR ADDRESS: NEW YORK STATE AGRIC. EXP. STATION, DEP. HORTIC. SCI., CORNELL UNIV., HEDRICK HALL, GENEVA, NEW YORK 14456.
JOURNAL: IN VITRO CELL DEV BIOL PLANT 28P (2). 1992. 97-105.
CODEN: IVCPE
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

MAJOR IMPROVEMENTS IN *BIOLISTIC* TRANSFORMATION OF SUSPENSION-CULTURED TOBACCO CELLS

ABSTRACT: Suspension cultures of the NT1 line of Nicotiana tabacum L. were used as a model system to study plant *biolistic* transformation, because of their uniformity, rapid growth, and ease of handling. The .beta.-glucuronidase *gene* and the neomycin phosphotransferase genes were used to assay transient and stable transformation. Numerous factors were studied and optimized, such that the frequency of transformation was increased roughly 60-fold for transient transformants and 20-fold for stable transformants. Both biological parameters (the promoter used to drive *gene* expression, osmotic preconditioning and postbombardment handling of the cells) and physical parameters of the bombardment process (*particle* acceleration device and accelerator parameters) were tested. The factors that increased transformation rates the most were promoter strength, use of a helium-driven *particle* accelerator, and osmotic preconditioning of the cells.
DESCRIPTORS: NICOTIANA-TABACUM BETA GLUCURONIDASE *GENE* NEOMYCIN PHOSPHOTRANSFERASE *GENE* PROMOTER STRENGTH *PARTICLE* ACCELERATOR OSMOTIC PRECONDITIONING

18/3,K/59 (Item 41 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08180483 BIOSIS NO.: 000094004256
EFFECT OF PROMOTER SEQUENCE ON TRANSIENT EXPRESSION OF THE BETA GLUCURONIDASE *GENE* IN EMBRYOGENIC CALLI OF LARIX-X-EUROLEPIS AND PICEA-MARIANA FOLLOWING MICROPROJECTION
AUTHOR: DUCHESNE L C; CHAREST P J
AUTHOR ADDRESS: FORESTRY CANADA, PETAWAWA NATIONAL FORESTRY INSTITUTE, P.O. BOX 2000, CHALK RIVER, ONT., CAN. K0J 1J0.
JOURNAL: CAN J BOT 70 (1). 1992. 175-180.
FULL JOURNAL NAME: Canadian Journal of Botany

CODEN: CJBOA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

EFFECT OF PROMOTER SEQUENCE ON TRANSIENT EXPRESSION OF THE BETA GLUCURONIDASE *GENE* IN EMBRYOGENIC CALLI OF LARIX-X-EUROLEPIS AND PICEA-MARIANA FOLLOWING MICROPROJECTION

ABSTRACT: The transient expression of the .beta.-glucuronidase reporter *gene* was compared in embryogenic cell lines of Larix .times. eurolepis (L. decidua .times. L. leptolepis) and Picea mariana after introduction of eight vectors containing different promoter sequences using the Dupone BiolisticTM *particle* delivery system. Transient .beta.-glucuronidase *gene* expression was highest in cells of both species after bombardment using the wheat abscisic acid inducible Em *gene* promoter. Transient .beta.-glucuronidase *gene* expression was comparable in P. mariana and L. .times. eurolepis for all vectors, with the exception of the rice actin promoter that yielded higher activity in P. mariana than in L. .times. eurolepis. The Em *gene* promoter proved inducible by abscisic acid; upon the addition of abscisic acid to the culture medium, .beta.-glucuronidase *gene* expression was increased 2.3- and 4.4-fold for L. .times. eurolepis and P. mariana, respectively. Investigation of .beta.-glucuronidase *gene* expression over time showed that all transient activity disappeared 16 days after microprojection.
DESCRIPTORS: LARIX-EUROLEPIS LARIX-DECIDUA WHEAT HYBRIDIZATION GENETIC TRANSFORMATION PLANT BREEDING TISSUE CULTURE DU PONT *BIOLISTIC* *PARTICLE* GUN

18/3,K/60 (Item 42 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

08158762 BIOSIS NO.: 000093134210
GENETIC TRANSFORMATION OF SWEET POTATO BY *PARTICLE* BOMBARDMENT
AUTHOR: PRAKASH C S; VARADARAJAN U
AUTHOR ADDRESS: PLANT MOL. AND CELL. GENETICS LAB., SCH. AGRIC. AND HOME ECONOMICS, TUSKEGEE UNIV., MILLBANK HALL, TUSKEGEE, ALA. 36088.
JOURNAL: PLANT CELL REP 11 (2). 1992. 53-57.
FULL JOURNAL NAME: Plant Cell Reports
CODEN: PCRPD
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

GENETIC TRANSFORMATION OF SWEET POTATO BY *PARTICLE* BOMBARDMENT

ABSTRACT: Transient and stable expression of foreign genes has been achieved in sweet potato using the *particle* bombardment system of *gene* delivery. Callus and root isolates of two genotypes (Jewel and TIS-70357) with positive signs of transformation have been recovered. Tungsten microcarries coated with plasmid *DNA* (pBI 221 containing the gusA *gene*) were accelerated at high velocity using a *biolistic* device into sweet potato target tissues. Histochemical examination of bombarded leaf and petiole explants revealed that most had cells expressing the gusA *gene*. When explants were cultured, calli and roots developed in most bombarded tissues. Similar results but with a lower frequency of transformation were observed when the...

...roots and calli were positive for gusA expression when tested even after one year of in vitro culture, and thus the expression of the foreign *gene* is fairly stable. The *particle* bombardment approach of *gene* delivery appears to have a potential for generating transgenic sweet potatoes with useful agronomic traits.
DESCRIPTORS: IPOMOEA-BATATAS PLANT GENETICS TISSUE CULTURE *GENE* TRANSFER *DNA* *BIOLISTIC* DEVICE METHOD PRODUCTIVITY CROP INDUSTRY

18/3,K/61 (Item 43 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

07901072 BIOSIS NO.: 000093000195
TRANSFORMATION OF THE DEVELOPING BARLEY ENDOSPERM BY *PARTICLE* BOMBARDMENT
AUTHOR: KNUDSEN S; MULLER M
AUTHOR ADDRESS: DEP. PHYSIOLOGY, CARLSBERG LABORATORY, 10 GL. CARLSBERG VEJ, DK-2500 COPENHAGEN VALBY, DENMARK.
JOURNAL: PLANTA (HEIDELB) 185 (3). 1991. 330-336.
CODEN: PLANA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

TRANSFORMATION OF THE DEVELOPING BARLEY ENDOSPERM BY *PARTICLE* BOMBARDMENT

ABSTRACT: Delivery of *DNA* into intact cells of the developing barley (Hordeum vulgare L.) endosperm was performed with the *BIOLISTIC* *particle* gun. It is shown that the proximal 532 base pairs (bp) of the upstream region of a B1-hordein *gene* drive the expression of the .beta.-glucuronidase (GUS) *gene* (uidA) in sub-aleurone and starchy-endosperm cells but not in cells devoid of starch, i.e. developing aleurone cells. The 35S promoter from cauliflower...

...This cell-specific activity of the hordein promoter was verified by a detailed histological study of the regions of the extruded endosperms expressing the uidA *gene*. The analysis included a histological study of the developing endosperm as a base for classifying the different cell types in the developing endosperm.
DESCRIPTORS: HORDEUM-VULGARE ALEURONE STARCHY ENDOSPERM CELLS *DNA* HORDEIN *GENE* BETA GLUCURONIDASE

18/3,K/62 (Item 44 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

07832868 BIOSIS NO.: 000041095034
DIRECT *GENE* TRANSFER AND TRANSIENT *GENE* EXPRESSION IN A MARINE RED ALGA USING THE *BIOLISTIC* METHOD
AUTHOR: KURTZMAN A L; CHENEY D P
AUTHOR ADDRESS: DEP. BIOL., NORTHEASTERN UNIV., BOSTON, MASS. 02115.
JOURNAL: 1991 MEETING OF THE IV INTERNATIONAL PHYCOLOGICAL CONGRESS AND THE PHYCOLOGICAL SOCIETY OF AMERICA, DURHAM, NORTH CAROLINA, USA, AUGUST 4-10, 1991. J PHYCOL 27 (3 SUPPL.). 1991. 42.
CODEN: JPYLA
DOCUMENT TYPE: Meeting
RECORD TYPE: Citation
LANGUAGE: ENGLISH

DIRECT *GENE* TRANSFER AND TRANSIENT *GENE* EXPRESSION IN A MARINE RED ALGA USING THE *BIOLISTIC* METHOD
DESCRIPTORS: ABSTRACT KAPPAPHYCUS-ALVAREZII EUCHEUMA-COTTONII PLASMIDS DU PONT *BIOLISTIC* *PARTICLE* DELIVERY SYSTEM FOREIGN *GENE* INTRODUCTION CAULIFLOWER MOSAIC VIRUS 35S PROMOTER REGION BETA GLUCURONIDASE

18/3,K/63 (Item 45 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

07825063 BIOSIS NO.: 000092106249
AN IMPROVED HELIUM-DRIVEN *BIOLISTIC* DEVICE
AUTHOR: SANFORD J C; DEVIT M J; RUSSELL J A; SMITH F D; HARPENDING P R; ROY M K; JOHNSTON S A

AUTHOR ADDRESS: DEP. HORTIC. SCI., CORNELL UNIV., HEDRICK HALL, GENEVA, NY 14456.
JOURNAL: TECHNIQUE (PHILA) 3 (1). 1991. 3-16.
CODEN: TCHNE
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

AN IMPROVED HELIUM-DRIVEN *BIOLISTIC* DEVICE

ABSTRACT: We have developed a new helium-driven *biolistic* acceleration system, which represents a major advance in *biolistic* technology, both in terms of efficiency and range of use. This system provides greater flexibility, safety, and repeatability. It also results in less damage to target tissues, higher velocities, and better *particle* distribution. A special configuration of the new helium system is designed as a hand-held instrument that allows for targeting of any size intact organism. The new system markedly enhances *biolistic* transformation efficiency in bacteria, yeast, plant cells, cultured animal cells, and intact mouse tissue, when compared to our most advanced device previously in use.
DESCRIPTORS: MOUSE YEAST BACTERIA TRANSFORMATION *DNA* TISSUE CULTURE

18/3,K/64 (Item 46 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

07777483 BIOSIS NO.: 000092080854
TRANSIENT EXPRESSION OF THE BETA GLUCURONIDASE *GENE* IN EMBRYOGENIC CALLUS OF PICEA-MARIANA FOLLOWING MICROPROJECTION
AUTHOR: DUCHESNE L C; CHAREST P J
AUTHOR ADDRESS: FOREST. CAN., PETAWAWA NATL. FOREST. INST., P.O. BOX 2000, CHALK RIVER, ONT. K0J 1J0, CAN.
JOURNAL: PLANT CELL REP 10 (4). 1991. 191-194.
FULL JOURNAL NAME: Plant Cell Reports
CODEN: PCRPD
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

TRANSIENT EXPRESSION OF THE BETA GLUCURONIDASE *GENE* IN EMBRYOGENIC CALLUS OF PICEA-MARIANA FOLLOWING MICROPROJECTION

ABSTRACT: A microprojection protocol using the DuPont BiolisticTM *particle* delivery system and the .beta.-glucuronidase (GUS) reporter *gene* fused with the 35S promoter of Cauliflower mosaic virus (CaMV) was developed for Picea mariana callus. Comparison of four tungsten microprojectile sizes showed the highest transient *gene* expression with 1.11.mu.m diameter *particles*. Adsorption of *DNA* on the microcarriers using calcium chloride led to higher GUS *gene* activity than using polyethylene glycol. GUS *gene* activity in P. mariana was the highest when cells were treated 5 and 6 days after subculturing to fresh media. The wheat ABA-inducible Em *gene* promoter yielded 4.5 times higher GUS *gene* activity than the 35S CaMV promoter. Comparison of transient GUS *gene* expression among 10 P. mariana embryogenic cell lines from six different open-pollinated families showed comparable *gene* activity, with exception of one family showing no GUS *gene* activity.
DESCRIPTORS: FORESTRY CAULIFLOWER MOSAIC VIRUS DISEASE RESISTANCE PLANT BREEDING *BIOLISTIC* *PARTICLE* DELIVERY SYSTEM BETA GLUCURONIDASE PROMOTER ACTIVITY

18/3,K/65 (Item 47 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

07543055 BIOSIS NO.: 000091095133
***BIOLISTIC* TRANSFORMATION OF A PROKARYOTE BACILLUS-MEGATERIUM**

AUTHOR: SHARK K B; SMITH F D; HARPENDING P R; RASMUSSEN J L; SANFORD J C
AUTHOR ADDRESS: DEP. HORTICULTURAL SCI., CORNELL UNIV., GENEVA, N.Y. 14456.
JOURNAL: APPL ENVIRON MICROBIOL 57 (2). 1991. 480-485.
FULL JOURNAL NAME: Applied and Environmental Microbiology
CODEN: AEMID
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

***BIOLISTIC* TRANSFORMATION OF A PROKARYOTE BACILLUS-MEGATERIUM**

ABSTRACT: We present a simple and rapid method for introducing exogenous *DNA* into a bacterium, Bacillus megaterium, utilizing the recently developed *biolistic* process. A suspension of B. megaterium was spread onto the surface of nonselective medium. Plasmid pUB110 *DNA*, which contains a *gene* that confers kanamycin resistance, was precipitated onto tungsten *particles*. Using a *biolistic* propulsion system, the coated *particles* were accelerated at high velocities into the B. megaterium recipient cells. Selection was done by use of an agar overlay containing 50 .mu.g of...
...medium interface after 72 h of incubation, and the recipient strain was shown to contain the delivered plasmid by agarose gel electrophoresis of isolated plasmid *DNA*. All strains of B. megaterium tested were successfully transformed by this method, although transformation efficiency varied among strains. Physical variables of the *biolistic* process and biological variables associated with the target cells were optimized, yielding > 104 transformants per treated place. This is the first report of the *biolistic* transformation of a procaryote.
DESCRIPTORS: PLASMID-COATED TUNGSTEN *PARTICLE* BOMBARDMENT BIOTECHNOLOGY

18/3,K/66 (Item 48 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

06890485 BIOSIS NO.: 000038040653
CEREAL PROGRESS VIA BIOTECHNOLOGY
AUTHOR: STRANGE C
JOURNAL: BIOSCIENCE 40 (1). 1990. 5-9, 14.
FULL JOURNAL NAME: Bioscience
CODEN: BISNA
RECORD TYPE: Citation
LANGUAGE: ENGLISH

DESCRIPTORS: CORN GENETIC ENGINEERING TISSUE CULTURE TRANSGENIC *DNA* MICROSPHERES *BIOLISTIC* *PARTICLE* DELIVERY SYSTEM

18/3,K/67 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

06709666 EMBASE No: 1996374621
Characterization of a zinc-dependent transcriptional activator from Arabidopsis
De Pater S.; Greco V.; Pham K.; Memelink J.; Kijne J.
Center for Phytotechnology, Leiden University, Wassenaarseweg 64,2333 AL Leiden Netherlands
Nucleic Acids Research (NUCLEIC ACIDS RES.) (United Kingdom) 1996, 24/23 (4624-4631)
CODEN: NARHA ISSN: 0305-1048
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

The Cinf 2-Hinf 2 zinc-finger is a widely occurring *DNA* binding motif, usually present as tandem repeats. The majority of Cinf 2-Hinf 2 zinc-finger proteins that have been studied are derived from animals. Here,

we characterize a member of a distinct class of plant Cinf 2-Hinf 2 zinc-finger proteins in detail. A cDNA clone encoding a *DNA* binding protein from Arabidopsis was isolated by SouthWestern screening. The protein, termed ZAP1 (Zinc-dependent Activator Protein-1), is encoded by a single copy *gene*, which is expressed to similar levels in root and flower, to a somewhat lower level in stem and to low levels in leaf and siliques. The optimal binding site was determined by random binding site selection, and the consensus sequence found is CGTTGACCGAG. The homology between ZAP1 and other *DNA* binding proteins is restricted to a repeated region of a stretch of 24 highly conserved amino acids followed by a zinc-finger motif (C-Xinf 4-C-Xinf 2inf 2inf -inf 2inf 3-H-Xinf 1-H). The C-terminal zinc-finger region is essential for *DNA* binding, whereas deletion of the N-terminal one resulted in 2.5-fold reduced binding affinity. Binding of ZAP1 to *DNA* was abolished by metal-chelating agents. The activation domain as determined in yeast is adjacent to and possibly overlapping with the *DNA* binding domain. *Particle* bombardment experiments with plant cells showed that ZAP1 increases expression of a gusA reporter *gene* that is under control of ZAP1 binding sites. We conclude that ZAP1 is a plant transcriptional activator with a Cinf 2-Hinf 2 zinc-finger *DNA* binding domain.
DRUG DESCRIPTORS:
chelating agent; complementary *dna*; *dna* binding protein--endogenous compound--ec
MEDICAL DESCRIPTORS:
amino terminal sequence; arabidopsis; article; binding affinity; binding site; *biolistic* transformation; carboxy terminal sequence; consensus sequence; controlled study; *gene* expression; molecular cloning; nonhuman; plant cell; plant leaf; plant root; priority journal; protein analysis; protein domain; reporter *gene*; sequence homology; southern blotting; tandem repeat

18/3,K/68 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE

06680103 EMBASE No: 1996345015
The role of multiple binding sites in the activation of zein *gene* expression by Opaque-2
Muth J.R.; Muller M.; Lohmer S.; Salamini F.; Thompson R.D.
Max Planck Inst. Zuchtungsforschung, Carl von Linne Weg 10,50829 Koln Germany
Molecular and General Genetics (MOL. GEN. GENET.) (Germany) 1996, 252/6 (723-732)
CODEN: MGGEA ISSN: 0026-8925
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

The role of multiple binding sites in the activation of zein *gene* expression by Opaque-2

...zeins and a number of non-storage proteins. The interaction of the O2 protein at three clustered binding sites on an isolated 22 kD zein *gene* promoter has been investigated. O2 is shown to transactivate transcription from these sites in tobacco mesophyll protoplasts as well as in maize endosperm cells transformed by *particle* bombardment. The binding sites have been mutated by base exchanges, singly or in different combinations, to determine their contribution to transactivation in vivo in both...
MEDICAL DESCRIPTORS:
**gene* activation; **gene* expression
article; binding site; *biolistic* transformation; electrophoretic mobility ; maize; nonhuman; priority journal; transcription initiation

18/3,K/69 (Item 3 from file: 73)
DIALOG(R)File 73:EMBASE

06659572 EMBASE No: 1996324449
Two cold inducible genes encoding lipid transfer protein LTP4 from barley show differential responses to bacterial pathogens
Molina A.; Diaz I.; Vasil I.K.; Carbonero P.; Garcia-Olmedo F.
Departamento de Biotecnologia, E.T.S. Ingenieros Agronomos-UPM,28040 Madrid Spain
Molecular and General Genetics (MOL. GEN. GENET.) (Germany) 1996, 252/1-2 (162-168)
CODEN: MGGEA ISSN: 0026-8925
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...and are less than 1 kb apart in tail-to-tail orientation. They differ in their non-coding regions from each other and from the *gene* corresponding to a previously reported Ltp4 cDNA (now Ltp4.1). Southern blot analysis indicated the existence of three or more Ltp4 genes per haploid genome and showed considerable polymorphism among barley cultivars. We have investigated the transient expression of genes HvLtp4.2 and HvLtp4.3 following transformation by *particle* bombardment, using promoter fusions to the beta-glucuronidase reporter sequence. In leaves, activities of the two promoters were of the same order as those of...
DRUG DESCRIPTORS:
beta glucuronidase--endogenous compound--ec; complementary *dna*; messenger *rna*--endogenous compound--ec; synthetase--endogenous compound--ec
MEDICAL DESCRIPTORS:
*bacterium; *barley; **gene* induction
article; bacterium transformation; *biolistic* transformation; cauliflower mosaic virus; cold; cultivar; haploidy; nonhuman; pathogenesis; phytochemistry; plant leaf; priority journal; promoter region; reporter *gene*; southern blotting; winter; xanthomonas

18/3,K/70 (Item 4 from file: 73)
DIALOG(R)File 73:EMBASE

06615235 EMBASE No: 1996280012
***Particle*-mediated *gene* transfer of granulocyte-macrophage colony-stimulating factor cDNA to tumor cells: Implications for a clinically relevant tumor vaccine**
Mahvi D.M.; Burkholder J.K.; Turner J.; Culp J.; Malter J.S.; Sondel P.M.; Yang N.-S.
Department of Surgery, H4-726, University of Wisconsin, 600 Highland Avenue,Madison, WI 53792 United States
Human Gene Therapy (HUM. GENE THER.) (United States) 1996, 7/13 (1535-1543)
CODEN: HGTHE ISSN: 1043-0342
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

***Particle*-mediated *gene* transfer of granulocyte-macrophage colony-stimulating factor cDNA to tumor cells: Implications for a clinically relevant tumor vaccine**

The necessity for prolonged tissue culture manipulations limits the clinical application of many forms of *gene* therapy in patients with malignancies. We hypothesized that granulocyte-macrophage colony-stimulating factor (GM-CSF) cDNA in a plasmid expression vector could be effectively introduced...

...GM-CSF by the transfected tumor cells would confer an effective immune response against tumors. GM-CSF cDNA in expression vectors was coated onto gold *particles* and accelerated with a *gene* gun device into mouse and human tumor cells. Human tumor tissue transfected within 4 hr of surgery

produced significant levels of transgenic human GM-CSF...

...vaccine treatment. In contrast, only 2% of control animals were protected by prior treatment with irradiated B16 cells transfected with the vector containing the luciferase *gene*. These results suggest that *particle*-mediated transfection of fresh tumor explants with cytokine cDNA is an effective and clinically attractive approach for cancer therapy.
DRUG DESCRIPTORS:
*cancer vaccine--drug development--dv; *complementary *dna*; *granulocyte macrophage colony stimulating factor
MEDICAL DESCRIPTORS:
**gene* transfer; *tumor cell
animal cell; animal experiment; animal model; article; *biolistic* transformation; cancer--therapy--th; controlled study; expression vector; *gene* therapy; genetic transfection; human; human cell; immune response; melanoma b16; melanoma cell; mouse; nonhuman; nude mouse; plasmid; tissue culture

18/3,K/71 (Item 5 from file: 73)
DIALOG(R)File 73:EMBASE

06517686 EMBASE No: 1996182623
Semi-automated positional analysis using laser scanning microscopy of cells transfected in a regenerating newt limb
Pecorino L.T.; Brockes J.P.; Entwistle A.
Research, Ludwig Institute for Cancer, 91 Riding House St.,London W1P 8BT United Kingdom
Journal of Histochemistry and Cytochemistry (J. HISTOCHEM. CYTOCHEM.) (United States) 1996, 44/6 (559-569)
CODEN: JHCYA ISSN: 0022-1554
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...formed. To establish an assay for positional identity, cells of distal and RA-treated distal blastemas are labeled by transfection with an alkaline phosphatase marker *gene* using *particle* bombardment (biolistics). After grafting the distal blastema to a proximal stump, a context known as intercalary regeneration, the proximodistal distribution of labeled cells in the...
MEDICAL DESCRIPTORS:
animal cell; animal experiment; animal tissue; article; axis; *biolistic* transformation; blastema; controlled study; fluorescence histochemistry; image processing; limb amputation; marker *gene*; mesenchyme; morphogenesis ; newt; nonhuman; priority journal

18/3,K/72 (Item 6 from file: 73)
DIALOG(R)File 73:EMBASE

06461200 EMBASE No: 1996127905
***Gene* gun delivery of mRNA in situ results in efficient transgene expression and genetic immunization**
Qiu P.; Ziegelhoffer P.; Sun J.; Yang N.S.
Department of Cancer Gene Therapy, Agracetus Inc,Middleton, WI 53562 United States
Gene Therapy (GENE THER.) (United Kingdom) 1996, 3/3 (262-268)
CODEN: GETHE ISSN: 0969-7128
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

***Gene* gun delivery of mRNA in situ results in efficient transgene expression and genetic immunization**

The use of mRNA to transfer genetic information into mammalian somatic cells in vivo or ex vivo may be advantageous in a number of *gene* therapy protocols. Success in utilizing in vivo *RNA* delivery for transgene expression has been extremely limited, partially due to *RNA* instability and to the lack of an efficient intracellular delivery mechanism applicable to a wide variety of tissue or organ systems. We report here that a *particle*-mediated *gene* delivery technology can be used to effectively deliver *RNA* molecules into a number of mammalian somatic tissue types. Expression from *RNA* transcripts of three reporter genes, firefly luciferase, human growth hormone and human alpha-1 antitrypsin, was detected in monolayer and suspension cell cultures bombarded in vitro, and in in vivo bombarded rat liver tissues, and mouse liver and epidermal tissues. *Gene* gun treatment of mouse epidermis in vivo with human alpha-1 antitrypsin messenger *RNA* elicited a strong, consistent antibody response which showed an increased titer with subsequent boosts. Results from this study point to future opportunities of applying *RNA* delivery techniques for transgenic studies, genetic vaccination, and *gene* therapy.
DRUG DESCRIPTORS:
*messenger *rna*
MEDICAL DESCRIPTORS:
**biolistic* transformation; **gene* expression; **gene* transfer; * immunization
animal cell; animal tissue; antibody response; antibody titer; article; epidermis; human; human cell; liver; mouse; nonhuman; priority journal; rat ; reporter *gene*; transgene

18/3,K/73 (Item 7 from file: 73)
DIALOG(R)File 73:EMBASE

06419807 EMBASE No: 1996082691
Immune responses to hepatitis B virus surface and core antigens in mice, monkeys, and pigs after Accell(R) *particle*-mediated *DNA* immunization
Fuller J.T.; Heydenburg Fuller D.; McCabe D.; Haynes J.R.; Widera G.
Agracetus Inc, 8520 University Green,Middleton, WI 53562 United States
Annals of the New York Academy of Sciences (ANN. NEW YORK ACAD. SCI.) (United States) 1995, 772/- (282-284)
CODEN: ANYAA ISSN: 0077-8923
DOCUMENT TYPE: Journal; Conference Paper
LANGUAGE: ENGLISH

Immune responses to hepatitis B virus surface and core antigens in mice, monkeys, and pigs after Accell(R) *particle*-mediated *DNA* immunization
DRUG DESCRIPTORS:
**dna*; *hepatitis b core antigen; *hepatitis b surface antigen
MEDICAL DESCRIPTORS:
**gene* targeting; *immunization
animal experiment; animal model; *biolistic* transformation; conference paper; expression vector; immune response; monkey; mouse; nonhuman; swine
CAS REGISTRY NO.: 9007-49-2 (*dna*)

18/3,K/74 (Item 8 from file: 73)
DIALOG(R)File 73:EMBASE

06385449 EMBASE No: 1996047644
Efficient and sustained transgene expression in mature rat oligodendrocytes in primary culture
Guo Z.; Yang N.-S.; Jiao S.; Sun J.; Cheng L.; Wolff J.A.; Duncan I.D.
School of Veterinary Medicine, University of Wisconsin, 2015 Linden Drive West,Madison, WI 53706 United States
Journal of Neuroscience Research (J. NEUROSCI. RES.) (United States) 1996, 43/1 (32-41)
CODEN: JNRED ISSN: 0360-4012

DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

In order to evaluate the characteristics and efficiency of *gene* transfer in primary cultures of oligodendrocytes, four different techniques including *particle* bombardment (Accell(R) *gene* gun), cationic liposome-mediated transfection (lipofection), calcium phosphate co-precipitation and retroviral infection were compared using the LacZ and luciferase reporter genes. Highly purified postnatal...

...sequential immunopanning, plated in culture, and transfected using various reporter and promoter genes. The most efficient expression of LacZ and luciferase genes was found with *particle* mediated *gene* delivery. The transgene expression level obtained with *gene* gun delivery was at least two- to 100-fold greater than three other tested *gene* transfer methods. Comparison of the relative strength of four viral and two cellular promoters in these primary oligodendrocytes cultures demonstrated that the CMV promoter was the strongest. Using a human growth hormone (hGH) reporter *gene*, a long-term transgene expression pattern in primary oligodendrocytes was demonstrated to be sustained in culture for the entire experimental period (4 weeks) after *particle*-mediated *gene* transfer. These results demonstrate that expression of a foreign *gene* can be effectively achieved in primary cultures of adult oligodendrocytes, especially by using the *particle* bombardment method. The results also suggest that the current ex vivo *gene* transfer system may be used to manipulate oligodendrocytes for future application in *gene* therapy studies.
MEDICAL DESCRIPTORS:
**gene* transfer; *oligodendroglia
animal cell; article; *biolistic* transformation; *gene* expression; genetic transfection; nonhuman; priority journal; promoter region; rat; reporter *gene*; transgene

18/3,K/75 (Item 9 from file: 73)
DIALOG(R)File 73:EMBASE

06354821 EMBASE No: 1996019419
Nuclear expression of an environmentally friendly synthetic protein based polymer *gene* in tobacco cells
Zhang X.; Guda C.; Datta R.; Dute R.; Urry D.W.; Daniell H.
Molecular Genetics Program, Department Botany and Microbiology, Auburn University,Auburn, AL 36849-5407 United States
Biotechnology Letters (BIOTECHNOL. LETT.) (United Kingdom) 1995, 17/12 (1279-1284)
CODEN: BILED ISSN: 0141-5492
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

Nuclear expression of an environmentally friendly synthetic protein based polymer *gene* in tobacco cells

We report here expression of a protein based polymer *gene* (Gly-Val-Gly-Val-Pro)inf 1inf 2inf 1, coding for three amino acids in a pentamer sequence repeated 121 times via the nuclear genome of tobacco cells. Transformed tobacco cells were obtained by *particle* bombardment. Stably transformed cells show the presence of the polymer *gene* in the tobacco nuclear genome (2-5 copies); introduced polymer *gene* is transcribed efficiently as revealed by Northern blots; Western blots show the presence of the polymer protein. To the best of our knowledge, this report represents the first demonstration of expression of a synthetic *gene* (with no natural analog) in higher plants.
DRUG DESCRIPTORS:
*synthetic *dna*; *tobacco
amino acid--endogenous compound--ec; cell nucleus *dna*--endogenous